



Translation
EC-Type Examination Certificate

- (2) **- Directive 94/9/EC -**
**Equipment and protective systems intended for use
in potentially explosive atmospheres**
- (3) **DMT 02 ATEX E 202 X**
- (4) **Equipment:** Gas monitors type Ultima XE and type Ultima XIR
- (5) **Manufacturer:** Mine SAFETY Appliance Co.
- (6) **Address:** USA – Pittsburgh, PA 15230-0427
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.
- (8) The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 03.2071 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
- | | |
|---------------------|----------------------|
| EN 50014:1997+A1-A2 | General requirements |
| EN 50018:2000 | Flameproof enclosure |
- (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 in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate
- (12) The marking of the equipment shall include the following:



II 2G EEx d IIC T4/T5

Deutsche Montan Technologie GmbH

Essen, dated 04. April 2003

signed: Jockers

DMT-Certification body

signed: Eickhoff

Head of special services unit

(13) Appendix to

(14) **EC-Type Examination Certificate**

DMT 02 ATEX E 202 X

(15) 15.1 Subject and type
Gas Monitor type Ultima XE and Ultima X IR

15.2 Description

The Gas Monitor serves for the measuring of flammable gasses and vapours in air under atmospheric conditions. The Gas Monitor Type Ultima XE enclosure is produced for protection type flameproof enclosure “d” and equipped with a sensors which is also produced for protection flameproof enclosure “d”. The Sensor is equipped with a breathing device of sintered metal. The sensor is equipped with a mechanism to disconnect the voltage with disassembly of the sensor for a short time while the part at the main housing which will stay under power corresponds with the type of protection increased safety “e”. The Gas Monitor Type Ultima IR enclosure and a separated sensor enclosure part is produced for protection type flameproof enclosure “d”.

15.3 Parameters

Electrical Parameters

Nominal voltage	24	V
Nominal current Signal Output	4-20	mA
Nominal power	3,1	W

Temperature Class assignment

Ultima XE

Ambient Temperature - 40 °C up to + 60 °C Temperature Class T4

Ultima XIR

Ambient Temperature - 40 °C up to + 60 °C Temperature Class T5

(16) Test and assessment report
BVS PP 03.2071 EG as of 04.04.2003

(17) Special conditions for safe use

The connection of the Gas Monitor with a control device with measurement function for explosion protection in accordance with EN 50054 and EN 50057 is not subject of this type examination certificate.

The Gas Monitor is approved for application in areas with an ambient temperature between -40 °C and + 60 °C. The assignment of the ambient temperature to the respective temperature class is to be made according the table in 15.3.

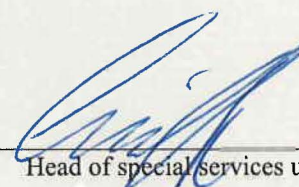
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 04.04.2003
BVS-Ld/Mi A 20010761

Deutsche Montan Technologie GmbH



DMT-Certification body



Head of special services unit



Translation



1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 202 X

Equipment: Gas Monitor type ULTIMA XE and type ULTIMA X IR

Manufacturer: Mine SAFETY Appliances Co.

Address: USA - Pittsburgh, PA 15230-0427

Description

The Gas Monitor type ULTIMA XE and type ULTIMA X IR can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and will then receive the following type marking:

Gas Monitor Typ ULTIMA XE OX/TOX

The Gas Monitor ULTIMA XE OX/TOX is produced for protection type flameproof enclosure "d" for the enclosure type ULTIMA XE with „Barrier Board ia“ and equipped with the sensor type ULTIMA XE OX/TOX which is produced for protection intrinsically safe "i". It serves for the measuring of gasses in air under atmospheric conditions. The upper enclosure part of the sensor with the cable bushing technology which is mounted into the flameproof enclosure ULTIMA XE is identically constructed to the certified ULTIMA XE sensor.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000+A1	Flameproof enclosure
EN 50020:2002	Intrinsic safety

Parameters

Electrical Parameters


Nominal voltage	DC	24	V
Maximum voltage U_m	DC	30	V
Nominal current Signal Output		4 - 20	mA
Nominal power		3,1	W

Temperature Class assignment

Gas Monitor ULTIMA XE OX/TOX
Ambient Temperature range - 40 °C up to + 60 °C Temperature Class T4

Marking

The marking of the equipment shall include the following:

 II 2G EEx d IIC T5 (main enclosure type ULTIMA XE)

 II 2G EEx ia IIC T4 (sensor type ULTIMA XE OX/TOX)

Special conditions for safe use

The connection of the Gas Monitor with a control device with measurement function for explosion protection in accordance with DIN EN 61 779-1 and DIN EN 61 779-4 is not subject of this type examination certificate.

The complete device Gas Monitor ULTIMA XE OX/TOX is approved for application in areas with an ambient temperature between -40 °C and + 60 °C. The ambient temperature of the complete device is T4.

The sensor type ULTIMA XE OX/TOX shall only be used in connection with the "ULTIMA XE OX/TOX barrier board ia" in the main enclosure ULTIMA XE.

Test and assessment report

BVS PP 03.2071 EG as of 30.09.2003

Deutsche Montan Technologie GmbH

Bochum, dated 30. September 2003

signed: Jockers

Certification body

signed: Eickhoff

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 30.09.2003
BVS-Ld/Rip/Mi A 20030719

Deutsche Montan Technologie GmbH


Certification body


Special services unit



2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 202 X

Equipment: Gas monitor type ULTIMA XE and type ULTIMA X IR
Manufacturer: Mine SAFETY Appliances Co.
Address: USA - Pittsburgh, PA 15230-0427

Description

The gas monitor type ULTIMA XE and type ULTIMA X IR can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and will then receive the following type marking:

Gas monitor type ULTIMA XI

The gas monitor ULTIMA XI serves for the measuring of gasses in air under atmospheric conditions. It is designed to be a stand alone enclosure produced for the type of protection flameproof enclosure "d". For the connection the gas monitor ULTIMA XI has to be mounted to a separate enclosure produced for the type of protection flameproof enclosure "d" (e.g. the main enclosure of the gas monitor ULTIMA XE) or produced for the type of protection increased safety "e". The enclosure of the sensor is equipped with a cable bushing technology.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2 General requirements
EN 50018:2000+A1 Flameproof enclosure

Parameters

Electrical Parameters


Nominal voltage	DC	24	V
Maximum voltage U_m	DC	30	V
Nominal current Signal Output		4 - 20	mA
Nominal power		4,2	W

Temperature Class assignment

Gas monitor ULTIMA XI
Ambient Temperature range - 40 °C up to + 60 °C Temperature Class T5

Marking

The marking of the equipment shall include the following:

 **II 2G EEx d IIC T5** (enclosure of gas monitor type ULTIMA XE)

Special conditions for safe use

The connection of the gas monitor with a control device with measurement function for explosion protection in accordance with DIN EN 61 779-1 and DIN EN 61 779-4 is not subject of this type examination certificate.

The gas monitor ULTIMA XI is approved for application in areas with an ambient temperature between -40 °C and + 60 °C. The temperature class is T5.

The gas monitor ULTIMA XI equipped with a tapered NPT thread or a metric thread for mounting to a connection enclosure of protection type increased safety „e“ or protection type flameproof enclosure „d“.

In case of mounting the gas monitor to an enclosure of protection type flameproof enclosure „d“ the reference pressure of the separate enclosure for the connection must not exceed 20 bar. The test of the mechanical strength of the separate enclosure for the connection and the test of the connecting thread with respect to explosion hazards must be ensured within the framework of the type test of the electrical apparatus, that is attached to the gas monitor ULTIMA XI. The threaded hole to which the gas monitor is attached to must meet the requirements of section 5.3 (Table 3/4) of EN 50018.

In case of mounting the gas monitor to enclosures in type of protection increased safety "e" the mechanical resistance and the IP protection of the mounted enclosure has to be ensured by the type test of the electrical apparatus being mounted to the gas monitor. After mounting of the gas monitor onto an enclosure in type of protection increased safety "e" the clearances and creepage distances must meet the requirements of 4.3 (Table 1) of EN 50019. The non-sheathed cables of the gas monitor must be routed and connected so as to be mechanically protected and corresponding to the temperature resistance of the cables as per 4.2, 4.5.1 and 4.8 of EN 50019.

The gas monitor ULTIMA XI must be screwed into the housing wall such that it is secured against self-loosening. The specified minimum thread depth of the add-on housing has to be observed.

The gas monitor ULTIMA XI must be included into the earthing and equipotential bonding of the complete unit including the enclosure for connecting.

Test and assessment report

BVS PP 03.2071 EG as of 26.05.2004

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 26. May 2004

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 26.05.2004
BVS-Ld/Mi A 20040035

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation

3rd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

**to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**

Equipment: Gas Monitor type Ultima XE and Ultima X IR

Manufacturer: Mine Safety Appliances Co.

Address: USA - Pittsburgh, PA 15230-0427

Description

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are assured by application of:

EN 61779-1:2000 + A11:2004
EN 61779-4:2000
EN 50104:2002 + A1:2004
EN 50271:2001

This supplement to the EC-type examination certificate covers devices with software versions 1.8E (electronics assembly), 1.08 (sensor module O2), 1.08 (sensor module combustible) and 1.12 and 1.2 (sensor module XIR). This supplement to the EC-type examination certificate covers for Ultima XE combustible the measuring function for methane, propane and n-pentane with the measuring range 0 - 100 % LEL. This supplement to the EC-type examination certificate covers for Ultima XIR the measuring function for methane, propane, ethylene and n-pentane with the measuring range 0 - 100 % LEL. This supplement to the EC-type examination certificate covers for Ultima XE oxygen the measuring function for oxygen (measurement of inertisation) with the measuring range 0 - 10 %(v/v).

Test report

Test report PFG-no. 41301103P dated 22/11/2004

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 23/11/2004

Signed: Jockers

Certification body

Signed: Kiesewetter

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 23. November 2004
PFG-Kie

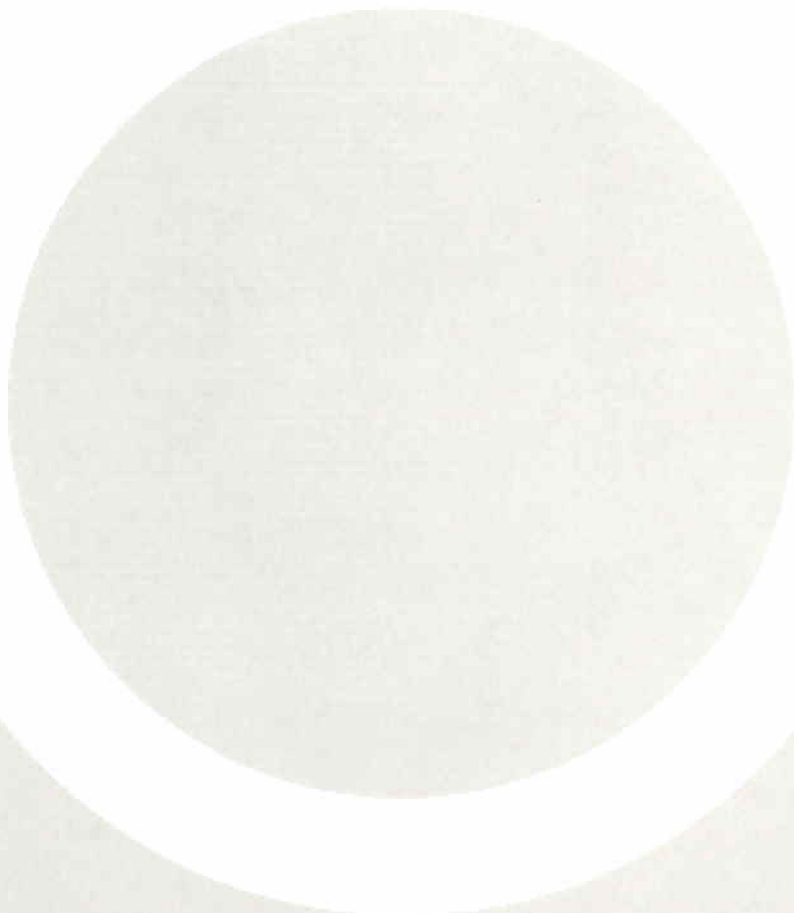
EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit





Translation
4th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X

Equipment: Gas Monitor type ULTIMA X Junction Box
Manufacturer: Mine Safety Appliances Co.
Address: USA - Pittsburgh, PA 15230-0427

Description

The gas monitor ULTIMA XI can be mounted to a junction box type ULTIMA X Junction Box according to the descriptive documents as mentioned in the pertinent test and assessment report .
The gas monitor ULTIMA X Junction Box serves for the mounting of a gas monitor ULTIMA XI in accordance to the 2nd supplement of this test report. It is produced as a separate enclosure for the type of protection increased safety "e".
For the mounting to a junction box the gas monitor ULTIMA XI is equipped with a cable bushing technology.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2 General requirements
EN 50019:2000 Increased Safety

Parameters

Electrical Parameters

Gas Monitor ULTIMA X Junction Box connected with Gas Monitor ULTIMA XI

Nominal voltage	DC	24	V
Maximum voltage U_m	DC	30	V
Nominal current Signal Output		4 - 20	mA
Nominal power		4,2	W


Temperature Class assignment

Gas Monitor ULTIMA XI
Ambient Temperature range -40 °C up to +60 °C Temperature Class T5

Gas Monitor ULTIMA X Junction Box
Ambient Temperature range -40 °C up to +60 °C Temperature Class T5

Marking

The marking of the Gas Monitor ULTIMA X Junction Box shall contain the following:

 II 2G EEx e II T5

Special conditions for safe use

The measurement function in accordance to annex II, part 1.5.5 of directive 94/9/EG is not subject of this type examination certificate.

The gas monitor ULTIMA XI junction box is approved for application in areas with an ambient temperature between -40 °C and +60 °C. The temperature class is T5.

The gas monitor ULTIMA XI junction box is equipped with a metric thread for mounting to a gas monitor ULTIMA XI in accordance to the 2nd supplement to this EC-type Examination Certificate.

The gas monitor ULTIMA XI must be screwed into the housing wall (ULTIMA XI junction box) such that it is secured against self-loosening.

Test and assessment report

BVS PP 03.2071 EG as of 06.12.2004.

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 06. December 2004

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 06. December 2004

BVS-Ld/Kw A 20040435

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services



Translation
5th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

**to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**

Equipment: Gas Monitor type Ultima XE and Ultima X IR

Manufacturer: Mine Safety Appliances Co.

Address: USA - Pittsburgh, PA 15230-0427

Description

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are assured by application of:

EN 61779-1:2000 + A11:2004
EN 61779-4:2000
EN 50104:2002 + A1:2004
EN 50271:2001

This supplement to the EC-type examination certificate covers devices with software versions 2.0E (electronics assembly), 1.10 (sensor module O₂), 1.10 (sensor module combustible) and 1.30 (sensor module XIR).

This supplement to the EC-type examination certificate covers for Ultima XE combustible the measuring function for methane, propane and n-pentane with the measuring range 0 - 100 % LEL.

This supplement to the EC-type examination certificate covers for Ultima XIR the measuring function for methane, propane, ethylene and n-pentane with the measuring range 0 - 100 % LEL.

This supplement to the EC-type examination certificate covers for Ultima XE oxygen the measuring function for oxygen (measurement of inertisation) with the measuring range 0 - 10 % (v/v).

Test report

Test report PFG-no. 41301103P NI dated 24/03/2005

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 29/03/2005

Signed: Migenda

Certification body

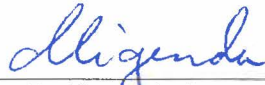
Signed: Kiesewetter

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 29. March 2005
PFG-Kie

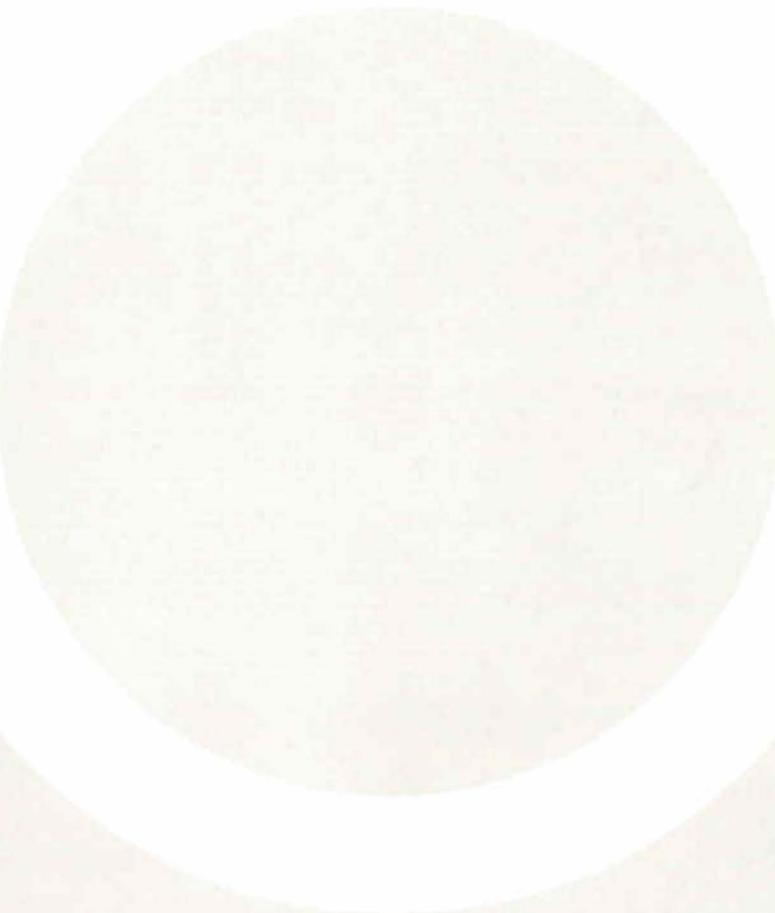
EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit





Translation

6th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

**to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**

Equipment: Gas Monitor type Ultima XI
Manufacturer: Mine Safety Appliances Co.
Address: USA - Pittsburgh, PA 15230-0427

Description

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are assured by application of:

EN 61779-1:2000 + A11:2004
EN 61779-4:2000
EN 50271:2001

This supplement to the EC-type examination certificate covers devices with software versions 1.30 (sensor module) and 1.04 (interface module).

This supplement to the EC-type examination certificate covers the measuring function for methane, propane, ethylene and n-pentane with the measuring range 0 - 100 % LEL.

Test report

Test report PFG-no. 41301103P NII dated 25/04/2006

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 25/04/2006

Signed: Migenda

Certification body


Signed: Kiesewetter

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 25. April 2006
PFG-Kie

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation

7th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

**to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**

Equipment: Gas Monitor type Ultima XE and Ultima X IR

Manufacturer: Mine Safety Appliances Co.

Address: USA - Pittsburgh, PA 15230-0427

Description

This supplement to the EC-type examination certificate covers modifications of hardware and software of the electronics assembly.

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are assured by application of:

EN 61779-1:2000 + A11:2004
EN 61779-4:2000
EN 50104:2002 + A1:2004
EN 50271:2001

This supplement to the EC-type examination certificate covers devices with software versions 3.1E (electronics assembly).

Test report

Test report PFG-no. 41301103P NIII dated 25/04/2006

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 25/04/2006

Signed: Migenda

Certification body

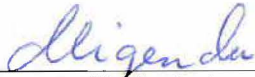
Signed: Kiesewetter

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 25. April 2006
PFG-Kie

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation
8th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X

Equipment: Gas monitor type ULTIMA X3
Manufacturer: Mine Safety Appliances Co.
Address: USA - Pittsburgh, PA 15230-0427

Description

The gas monitor type ULTIMA XE and type ULTIMA X IR can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and will then receive the following type name:

Gas monitor type ULTIMA X3

The gas monitor type ULTIMA X3 serves for the measuring of gasses in air under atmospheric conditions. It is designed to be a stand alone enclosure (mechanically in accordance to the main enclosure of gas monitor type ULTIMA XE) produced for the type of protection flameproof enclosure "d" and up to two mounted sensor enclosures type ULTIMA XE SENSOR and one mounted sensor enclosure type ULTIMA XIR in accordance to DMT 02 ATEX E 202 X.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2 General requirements
EN 50018:2000+A1 Flameproof enclosure

Parameters

Electrical Parameters

Nominal voltage	DC	24	V
Maximum voltage U_m	DC	30	V
Nominal power		5.16	W
Digital Output, 3-wire/GND/Sign+/Sign-	DC	5	V


Temperature Class assignment

Sensor Ultima XE
Ambient Temperature range - 40 °C up to + 60 °C Temperature Class T4

Main enclosure Ultima XE/X3 and Sensor Ultima XIR
Ambient Temperature range - 40 °C up to + 60 °C Temperature Class T5

Marking

The marking of the equipment shall include the following:

 **II 2G EEx d IIC T5** (main enclosure of gas monitor type ULTIMA XE/X3 and main enclosure of gas monitor type ULTIMA XE/X3 with sensor type ULTIMA XIR)

II 2G EEx d IIC T4 (enclosure of gas sensor type ULTIMA XE)

Special conditions for safe use

The connection of the gas monitor with a control device with measurement function for explosion protection in accordance with DIN EN 61 779-1 and DIN EN 61 779-4 is not subject of this type examination certificate.

The gas monitor ULTIMA X3 is approved for application in areas with an ambient temperature between -40 °C up to + 60 °C. The temperature class is T4 or T5 depending on the mounted sensor type.

Test and assessment report

BVS PP 03.2071 EG as of 23.06.2006

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 23. June 2006

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 23.06.2006

BVS-Ld/Ar A 20040689

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation
9th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X

Equipment: Gas Monitor type Ultima XE, Ultima X IR and Ultima XI

Manufacturer: Mine Safety Appliances Co.

Address: USA - Pittsburgh, PA 15230-0427

Description

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are assured by application of:

EN 61779-1:2000 + A11:2004
EN 61779-4:2000

This supplement to the EC-type examination certificate covers the measuring function of Ultima XE in the measuring range 0 - 100 % LEL for 2-butanone, acetone, acetylene, 1,3-butadiene, diethyl ether, ethane, ethanol, ethylene, ethyl acetate, ethylene oxide, (FAM-)Standard mineral spirit 65/95, n-butane, n-hexane, n-pentane, 2-propanol, propylene, propylene oxide, hydrogen, cyclopentane, allyl alcohol, i-butylene, i-butane, methanol and cyclohexane.

This supplement to the EC-type examination certificate covers the measuring function of Ultima X IR and Ultima XI in the measuring range 0 - 100 % LEL for 2-butanone, acetone, 1,3-butadiene, diethyl ether, ethane, ethanol, ethyl acetate, ethylene oxide, (FAM-)Standard mineral spirit 65/95, i-butyl acetate, n-butyl acetate, n-butane, n-hexane, n-nonane, n-pentane, 2-propanol, propylene, propylene oxide, toluene, xylene (mixture of isomers 1:1:1 p-m-o), cyclopentane, allyl alcohol, i-butylene, i-butane and methanol.

Test report

Test report PFG-no. 41301103P NIV dated 03/07/2006

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 03/07/2006

Signed: Dr. Jockers

Certification body

Signed: Dr. Kiesewetter

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 03. July 2006
PFG-Kie

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation
10th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

**to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**

Equipment: Gas Monitor type Ultima XE
Manufacturer: Mine Safety Appliances Co.
Address: USA - Pittsburgh, PA 15230-0427

Description

This supplement to the EC-type examination certificate covers the use of an alternative oxygen sensor. The Essential Health and Safety Requirements with respect to the measuring function for explosion protection in the measuring range 0 - 10 %(v/v) oxygen are assured by application of:

**EN 50104:2002 + A1:2004
EN 50271:2001**

This supplement to the EC-type examination certificate covers devices with software version 1.10 (sensor module O2).

Test report

Test report PFG-no. 41301103P NV dated 03/07/2006

Special conditions for safe use

When using the "Sensor Guard" the response time t_{90} is up to 50 s.

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 03/07/2006

Signed: Dr. Jockers

Certification body

Signed: Bredenbröker

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 03. July 2006
PFG-Kie

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation

11th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 202 X

Equipment: Gas Monitor Typ Ultima XE und Ultima X IR
Manufacturer: Mine Safety Appliances Co.
Address: USA - Pittsburgh, PA 15230-0427

Description

This supplement to the EC-type examination certificate concerns an alternative electronics assembly with HART-interface, operation of the sensors XE, XI and XIR with a separate junction box and a modified potting material for the sensor module combustible and sensor module O2.

The Essential Health and Safety Requirements with respect to the electrical equipment intended for use in potentially explosive atmospheres are assured by compliance with:

EN 60079-0:2006
EN 60079-1:2004
EN 60079-7:2007
EN 60079-11:2007

The Essential Health and Safety Requirements with respect to the measuring function for explosion protection are assured by application of:

EN 61779-1:2000 + A11:2004
EN 61779-4:2000
EN 50104:2002 + A1:2004
EN 50271:2001

This supplement to the EC-type examination certificate covers apparatus with software-versions 1.1E or 3.1E (electronics assembly with/without HART), 1.10 (sensor module O2), 1.10 (sensor module combustible), 1.40 (sensor module XIR) and for apparatus Ultima XI with software-versions 1.40 (sensor PCB) and 1.04 (interface PCB).

Test report

BVS PP 03.2071 EG N5 dated 24/10/2008
PFG-no. 41301103P NVI dated 27/10/2008

Parameters

Ultima XE main enclosure with XP-Port and HART module and Ultima HART-module (X Junction Box with XP-Port and HART module)

Non intrinsic safe supply circuit

Maximum voltage U_m 250 VAC

Intrinsic safe output circuit with type of protection Ex ib IIC, connection via plug in connector XP-Port

Maximum output voltage U_o DC 6,14 V
Maximum output current I_o 170 mA
Maximum output power P_o 260 mW
Maximum outer capacity C_o 34 μ F
Maximum outer inductivity L_o 1,3 mH

The parameters of the versions examined up to now remain unchanged.

Special conditions for safe use

- HART shall only be used for Ultima X configuration, calibration or diagnostics. For safety relevant applications, the 4-20 mA analogue output shall be used for measuring values.
- The ALERT OPTION shall be set to "ON".
- Some of the flameproof joints have widths that are bigger and gaps that are smaller than the values required in table 2 of EN 60079-1:2004. In case of repair or exchange of parts forming these flameproof parts the widths and the gaps of these joints have to comply with the values of commercial specification no. 10000012327 signed 04/05/2005 and drawing no. 10000017784 signed 04/05/2005.
- see DMT 02 ATEX E 202 X and supplements 1 to 10.

DEKRA EXAM GmbH

Bochum, dated 27/10/2008

Signed: Jockers

Signed: Bredenbröcker

Certification body

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 27. October 2008
PFG-Kie

DEKRA EXAM GmbH



Certification body



Special services unit



Translation

(1) 12. Supplement to the EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6
- (3) No. of EC-Type Examination Certificate: **DMT 02 ATEX E 202 X**
- (4) Equipment: **Gas Monitors Types Ultima XE, Ultima X IR and Ultima XI**
- (5) Manufacturer: **Mine Safety Appliances Co.**
- (6) Address: **USA - Pittsburgh, PA 15230-0427**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test report PFG-no. 41301103P NVII.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
- EN 60079-29-1:2007**
EN 50271:2001
- This supplement to the EC-type examination certificate covers equipment with software-versions 1.3E or 3.5E (electronics assembly with/without HART), 1.10 (sensor module combustible), 1.40 (sensor module XIR) and for apparatus Ultima XI with software-versions 1.40 (sensor PCB) and 1.04 (interface PCB).
- (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 appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

Not changed

DEKRA EXAM GmbH
Bochum, dated 02. May 2011

Signed: Simanski

Certification body

Signed: Kiesewetter

Special services unit



- (13) Appendix to
- (14) **12. Supplement to the EC-Type Examination Certificate DMT 02 ATEX E 202 X**

(15) 15.1 Subject and type

Gas Monitors Types Ultima XE, Ultima X IR and Ultima XI

15.2 Description

This supplement to the EC-type examination certificate concerns re-testing of the equipment according to EN 60079-29-1 and modifications of the sensor XIR. The equipment can be modified according to the descriptive documents as mentioned in the pertinent test report. The measuring ranges and gases covered by this EC-type examination certificate are listed in supplements 3, 6 und 9 to this certificate.

15.3 Parameters

See EC-type examination certificate DMT 02 ATEX E 202 X and supplements 1, 2, 4, 8 and 11

(16) Test and assessment report

PFG-no. 41301103P NVII as of 28.04.2011

(17) Special conditions for safe use

- See supplement 11 to the EC-type examination certificate DMT 02 ATEX E 202 X

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 02. May 2011
PFG-Kie/Bre



Certification body




Special services unit


Translation


(1) 13. Supplement to the EC-Type Examination Certificate


- (2) Equipment and protective systems intended for use
in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6
- (3) No. of EC-Type Examination Certificate: **DMT 02 ATEX E 202 X**
- (4) Equipment: **Gas Monitor Typ Ultima XE, Ultima X IR, Ultima XE OX/TOX, Ultima XI, Ultima X3, Ultima X Series Junction Box and Ultima Hart Modul**
- (5) Manufacturer: **Mine Safety Appliances Co.**
- (6) Address: **1000 Cranberry Woods Drive, Cranb. Township, PA 16066-5296, USA**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the Test and Assessment Report BVS PP 03.2071EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
- EN 60079-0:2009 General requirements**
EN 60079-1:2007 Flameproof enclosure "d"
EN 60079-11:2007 Intrinsic safety "i"
- (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 appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.


(12) The marking of the equipment shall include the following:


-  **II 2G Ex d IIC T5 Gb**
Main enclosure of Gas Monitor type Ultima XE resp. XE/X3
and main enclosure of Gas Monitor type Ultima XE resp.
XE/X3 with sensor type Ultima XIR


-  **II 2G Ex d IIC T5 Gb**
Main enclosure Gas Monitor type Ultima X series junction box
and main enclosure of Gas Monitor Typ Ultima X series
junction box with sensor type Ultima XIR

-  **II 2G Ex d [ib] IIC T5 Gb**
Main enclosure of Gas Monitor Typ Ultima XE with XP-Port
and HART module

-  **II 2G Ex d [ib] IIC T5 Gb**
Gas Monitor type HART module (Ultima X series junction box
with XP-Port and HART module)

-  **II 2G Ex d IIC T4 Gb**
Enclosure of sensor type Ultima XE Sensor

-  **II 2G Ex ia IIC T4 Gb**
Sensor type Ultima XE OX/TOX

-  **II 2G Ex d IIC T5 Gb**
Gas Monitor Ultima XI

DEKRA EXAM GmbH
Bochum, dated 2013-09-02

Signed: Dr. Eickhoff

Signed: Dr. Wittler

Certification body

Special services unit

- (13) Appendix to
- (14) **13. Supplement to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**

(15) 15.1 Subject and type

Gas Monitor Typ Ultima XE, Ultima X IR, Ultima XE OX/TOX, Ultima XI, Ultima X3,
Ultima X Series Junction Box and Ultima Hart Modul

15.2 Description

The equipment does comply with the actual standards listed at (9) and can be modified according to the descriptive documents as mentioned in the pertinent Test and Assessment Report.

The Junction Box for the Gas Monitor type Ultima X Junction Box in type of protection Increased safety "e" do not apply any longer.

15.3 Parameters

The parameters remain unchanged.

(16) Test and Assessment Report

BVS PP 03.2071 EG as of 02.09.2013

(17) Special conditions for safe use

Some of the flameproof joints have widths that are bigger and gaps that are smaller than the values required in table 2 of EN 60079-1:2007. In case of repair or exchange of any parts forming these flameproof parts, the widths and the gaps of these joints have to comply with the values of drawing no. SK3098-1264 signed 25.07.2013.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 2013-09-02
BVS-Ld/Mu A 20130237

A handwritten signature in green ink, appearing to read "G. Hoff".








Certification body

A handwritten signature in blue ink, appearing to read "W. Müller".

Special services unit

Translation

(1) 14th Supplement to the EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6
- (3) No. of EC-Type Examination Certificate: **DMT 02 ATEX E 202 X**
- (4) Equipment: **Gas Monitor type Ultima XE, Ultima X IR, Ultima XE OX/TOX, Ultima XI, Ultima X3, Ultima X Series Junction Box und Ultima Hart Module**
- (5) Manufacturer: **Mine Safety Appliances Company, LLC**
- (6) Address: **1000 Cranberry Woods Drive, Cranberry Township, PA 16066-5296, United States of America**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the Test and Assessment Report BVS PP 03.2071 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
EN 60079-0:2012 + A11:2013 General requirements
EN 60079-1:2007 Flameproof enclosure "d"
EN 60079-11:2012 Intrinsic safety "i"
- (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 appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:
-  **II 2G Ex d IIC T5 Gb**
Main enclosure of Gas Monitor type Ultima XE resp. XE/X3 and main enclosure of Gas Monitor type Ultima XE resp. XE/X3 with sensor type Ultima XIR
 -  **II 2G Ex d IIC T5 Gb**
Main enclosure Gas Monitor type Ultima X series junction box and main enclosure of Gas Monitor type Ultima X series junction box with sensor type Ultima XIR
 -  **II 2G Ex d [ib] IIC T5 Gb**
Main enclosure of Gas Monitor type Ultima XE with XP-Port and Hart module
 -  **II 2G Ex d [ib] IIC T5 Gb**
Gas Monitor type Hart module (Ultima X series junction box with XP-Port and Hart module)
 -  **II 2G Ex d IIC T4 Gb**
Enclosure of sensor type Ultima XE Sensor
 -  **II 2G Ex ia IIC T4 Gb**
Sensor type Ultima XE OX/TOX
 -  **II 2G Ex d IIC T5 Gb**
Gas Monitor type Ultima XI

DEKRA EXAM GmbH
Bochum, dated 2015-03-18

Signed: Dr. Eickhoff

Signed: Schumann

Certification body

Special services unit



Page 1 of 2 of DMT 02 ATEX E 202 X / N14
This certificate may only be reproduced in its entirety and without any change.

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

- (13) Appendix to
- (14) **14th Supplement to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**
- (15) 15.1 Subject and type

Gas Monitor type Ultima XE, Ultima X IR, Ultima XE OX/TOX, Ultima XI, Ultima X3, Ultima X Series Junction Box und Ultima Hart Module.

15.2 Description

The equipment also meet the current standard items listed and can be manufactured according to the documents listed in the Test Report.

The Junction Box for the Gas Monitor type Ultima X Junction Box in type of protection Increased safety "e" does not apply any longer to the certificate.

15.3 Parameters

The parameters remain unchanged.

- (16) Test and Assessment Report
BVS PP 03.2071 EG as of 2015-03-18
- (17) Special conditions for safe use

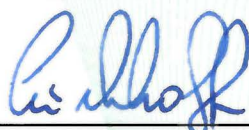
Some of the flameproof joints have widths that are bigger and gaps that are smaller than the values required in table 2 of EN 60079-1:2007. In case of repair or exchange of any parts forming these flameproof parts, the widths and the gaps of these joints have to comply with the values of drawing no. SK3098-1264 signed 25.07.2013.

For the painted version of the Gas Monitor it is needed to minimize the risk from electrostatic discharge. A warning label is placed on the gas monitor enclosure. Further information is provided in the instruction manual.

The measuring function according to annex II paragraph 1.5.5 of the directive 94/9/EC is not part of this EC-type examination.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 2015-03-18
BVS-Ld/Mu A 20150290



Certification body



Special services unit

Translation

(1) 15. Supplement to the EC-Type Examination Certificate

(Supplement accordant with Annex III number 6)

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
- (3) No. of EC-Type Examination Certificate: **DMT 02 ATEX E 202 X**
- (4) Equipment: **Gas Monitors Types Ultima XE and Ultima XIR**
- (5) Manufacturer: **Mine Safety Appliances Company, LLC**
- (6) Address: **1000 Cranberry Woods Drive, Cranberry Township, PA 16066, United States of America**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test report PFG-no. 41301103P NVIII.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
- EN 60079-29-1:2007**
EN 50104:2010
EN 50271:2010
- This supplement to the EC-type examination certificate covers the measuring function for the gases and vapours listed in supplement 3 and 9 to this EC-type examination certificate in the measuring ranges designated therein.
This supplement to the EC-type examination certificate covers equipment with software-versions 1.5 or 3.5E (electronics assembly with/without HART), 1.10 (sensor module XE combustible and oxygen) and 1.40 (sensor module XIR).
- (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 appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

See Supplement 14 to DMT 02 ATEX E 202 X

DEKRA EXAM GmbH
Bochum, dated April 21, 2015

Signed: Siebrecht

Certification body

Signed: Bredenbröker

Special services unit



- (13) Appendix to
- (14) **15. Supplement to the EC-Type Examination Certificate
DMT 02 ATEX E 202 X**
- (15) 15.1 Subject and type

Gas Monitors Types Ultima XE and Ultima XIR

15.2 Description

This supplement to the EC-type examination certificate concerns re-testing of the equipment according to EN 50104:2010 and EN 50271:2010.

15.3 Parameters

See supplement 14 to the EC-type examination certificate DMT 02 ATEX E 202 X

- (16) Test and assessment report

PFG-no. 41301103P NVIII of 21/04/2015

- (17) Special conditions for safe use

- See supplement 14 to the EC-type examination certificate DMT 02 ATEX E 202 X
- See section "Safety Regulations" of the instruction manual

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, April 21, 2015
PFG-Kie/Bre



Certification body



Special services unit