(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) **BVS 10 ATEX E 009 X**

(4) **Equipment:** **Gas detector type PrimaX I**

(5) **Manufacturer:** **MSA AUER GmbH**

(6) **Address:** **12059 Berlin, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(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 10.2129 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009 General requirements
EN 60079-11:2007 Intrinsic safety 'i'
EN 60079-26:2007 Equipment Group II Category 1G
EN 61241-11:2006 Protection by intrinsic safety 'ıD'

(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 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 1G Ex ia IIC T4 Ga
II 2D Ex ia IIIC T130°C Db

DEKRA EXAM GmbH
Bochum, dated 11. May 2010

Certification body

Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com

(13) Appendix to

(14) # EC-Type Examination Certificate

BVS 10 ATEX E 009 X

(15) 15.1 Subject and type

Gas detector type PrimaX I

15.2 Description

The device type PrimaX I is a stationary gas detector for the measurement of oxygen or toxic gases in ambient air under atmospheric conditions. The gas detector contains one electrochemical sensor for gas measurement.

The gas detector type PrimaX I is designed with an antistatic plastic housing. The surface resistance of the housing is $< 10^9\ \Omega$. The housing is mounted to a plastic mounting bracket which can be pre-mounted before the PrimaX I will be connected to the mounting bracket. The surface resistance of the mounting bracket is $\leq 10^9\ \Omega$, too.

The 2-wire connection to the gas detector type PrimaX I is done via a M25 cable gland.

As an option, the gas detector type PrimaX I contains a HART module. The connection for an external HARD-Handheld Controller can be done by a special HART plug-in connector.

15.3 Parameters

15.3.1 Intrinsically safe power supply-/signal circuit,
connection via a M25 cable gland and 2 internal plug-in terminals.

Maximum input voltage	U_i	DC	28	V
Maximum input current	I_i		110	mA
Maximum input power	P_i		770	mW
Maximum internal capacity	C_i		negligible	
Maximum internal inductivity	L_i		negligible	

15.3.2 Optional intrinsically safe HART-connector, connection via plug-in connector.
Only for a temporary connection of an intrinsically safe HARD-Handheld Controller.

Maximum output voltage	U_o	DC	28	V
Maximum output current	I_o		110	mA
Maximum output power	P_o		770	mW
Maximum external capacity	C_o		1	nF
Maximum external inductivity	L_o		10	µH
Maximum input voltage	U_i	DC	5	V
Maximum input current	I_i		1	mA
Maximum input power	P_i		5	mW
Maximum internal capacity	C_i		negligible	
Maximum internal inductivity	L_i		negligible	

15.3.3 Ambient temperature range $-40\ °C \leq T_a \leq +70\ °C$

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(16) Test and assessment report

BVS PP 10.2129 EG as of 11.05.2010

(17) Special conditions for safe use

The measuring function for explosion protection is not subject of this Test report.

It is not allowed to open the key pad cover during usage in areas where Category 1G, Group IIC is required.

The device shall only be used in areas known to have a low risk of mechanical impact if installed in areas where Category 2D is required.

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(1) # 1. 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: **BVS 10 ATEX E 009 X**

(4) Equipment: **Gas detector type PRIMA X I and type PRIMA X P**

(5) Manufacturer: **MSA AUER GmbH**

(6) Address: **12059 Berlin, Germany**

(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 10.2129 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009	**General requirements**
EN 60079-1:2007	**Flameproof Enclosures ´d´**
EN 60079-11:2007	**Intrinsic safety ´i´**
EN 60079-26:2007	**Equipment Group II Category 1G**
EN 60079-31:2009	**Equipment dust ignition protection by enclosure ´t´**
EN 61241-11:2006	**Protection by intrinsic safety ´iD´**

(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 1G Ex ia IIC T4 Ga **II 2D Ex ia IIIC T130 °C Db**	for type PrimaX I
II 2G Ex d ia [ia] IIC T4 Gb **II 2D Ex tb ia [ia] IIIC T130°C Db IP67**	for type PrimaX P

DEKRA EXAM GmbH
Bochum, dated 16.03.2011

Certification body

Special services unit

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

(13) Appendix to

(14) **1. Supplement to the EC-Type Examination Certificate**
BVS 10 ATEX E 009 X

(15) 15.1 Subject and type

Gas detector type PrimaX I and type PrimaX P

15.2 Description

Gas detector type PrimaX I:
The gas detector can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report. The electronic circuits of the gas detector type PrimaX I were slighty modified.

Gas detector type PrimaX P:
The gas detector can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and receives then the marking type **PrimaX P**.

The device type PrimaX P is a stationary gas detector for the measurement of combustible, oxygen or toxic gases in ambient air under atmospheric conditions. The gas detector contains, depend on construction, one changeable intrinsically safe electrochemical sensor or one sensor in type of protection Flameproof Enclosure for gas measurement.
The connection to the non intrinsically safe power supply-/signal circuit is done via a cable gland (d).
As an option, the gas detector type PrimaX P contains a HART modul. The connection for an external intrinsically safe HART-Handheld Controller can be done by an special HART plug-in connector.

15.3 Parameters

15.3.1 Gas detector type PrimaX I - Unchanged

15.3.2 Gas detector type PrimaX P

15.3.2.1 Non intrinsically safe power supply-/signal circuit, connection via a cable gland (d) and internal 4-Pin plug-in terminal

Nominal voltage	U		30	V
Maximum input voltage	U_m	DC	60	V

15.3.2.2 Optional non intrinsically safe relays contact circuit, connection via a cable gland (d) and 2 internal 3-Pin plug-in terminals (changeover-relays contacts).

Maximum switching voltage	DC	30	V
Maximum switching current		2	A

15.3.2.3 Optional intrinsically safe HART-circuit, connection via plug-in connector.
Only for a temporary connection of an intrinsically safe HART-Handheld Controller.

Maximum output voltage	Uo	2,7	V
Maximum output current	Io	137	mA
Maximum output power	Po	185	mW
Maximum external capacity	Co	1	nF
Maximum external inductivity	Lo	10	µH
Maximum input voltage	Ui	5	V
Maximum input current	Ii	1	mA
Maximum input power	Pi	5	mW
Maximum internal capacity	Ci	negligible	
Maximum internal inductivity	Li	negligible	

15.3.2.4 Ambient temperature range main housing PrimaX P		$-40\ °C \leq T_a \leq +70\ °C$
Ambient temperature range PrimaX Ex Sensor		$-40\ °C \leq T_a \leq +55\ °C$
Ambient temperature range PrimaX Ox-Tox Sensor		$-40\ °C \leq T_a \leq +70\ °C$

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(16) Test and assessment report

BVS PP 10.2129 EG as of 16.03.2011

(17) Special conditions for safe use

17.1 For Gas detector type PrimaX I:

Unchanged

17.2 For Gas detector type PrimaX P:

The measuring function for explosion protection is not subject of this supplement to the EC-Type Examination Certificate.

The joint widths of the flameproof joint of this apparatus are in parts longer, and its gaps are in parts shorter than the values of Table 2 of IEC 60079-1:2007. For maintenance or repair contact the manufacturer.

Intensive electrostatic charging processes to the instrument label have to be prevented.

In case of using the PrimaX Ex Sensor a rated ambient temperature range from -40 °C up to +55 °C is usable for the complete instrument.

In case of using the PrimaX Ox-Tox Sensor a rated ambient temperature range from -40 °C up to +70 °C is usable for the complete instrument.

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(1) # 2. 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: **BVS 10 ATEX E 009 X**

(4) Equipment: **Gas detector type PrimaX I and type PrimaX P**

(5) Manufacturer: **MSA AUER GmbH**

(6) Address: **12059 Berlin, Germany**

(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 10.2129 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009	**General requirements**
EN 60079-1:2007	**Flameproof Enclosures 'd'**
EN 60079-11:2007	**Intrinsic safety 'i'**
EN 60079-26:2007	**Equipment Group II Category 1G**
EN 60079-31:2009	**Equipment dust ignition protection by enclosure 't'**
EN 61241-11:2006	**Protection by intrinsic safety 'iD'**

(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 1G Ex ia IIC T4 Ga
II 2D Ex ia IIIC T130 °C Db for type PrimaX I

II 2G Ex d ia [ia] IIC T4 Gb
II 2D Ex tb ia [ia] IIIC T130°C Db IP67 for type PrimaX P

DEKRA EXAM GmbH
Bochum, dated 30.03.2012

Certification body

Special services unit

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

(13) Appendix to

(14) **2. Supplement to the EC-Type Examination Certificate**
BVS 10 ATEX E 009 X

(15) 15.1 Subject and type

Gas detector type PrimaX I and type PrimaX P

15.2 Description

Gas detector type PrimaX I:
The gas detector can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.
The electronics of the Gas detector type PrimaX I was slightly modified.
Gas detector type PrimaX P:
The gas detector can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.
The electronics and the mechanical sensor design of the Gas detector type PrimaX P was slightly modified.
Instead of the certified passive electrochemical sensors, the sensor MSA XCell™ XXX* (FTZU 09 ATEX 0223 U) can be used in the Gas detector type PrimaX P. The sensor is mounted in the PrimaX Ox-Tox sensor housing.

15.3 Parameters

15.3.1 Gas detector type PrimaX I – Unchanged

15.3.2 Gas detector type PrimaX P – Unchanged

(16) Test and assessment report

BVS PP 10.2129 EG as of 30.03.2012

(17) Special conditions for safe use

17.1 For Gas detector type PrimaX I:

Unchanged

17.2 For Gas detector type PrimaX P:

Unchanged

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Translation

(1) 3. 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: **BVS 10 ATEX E 009 X**

(4) Equipment: **Gas Detector type PrimaX I and PrimaX P**

(5) Manufacturer: **MSA AUER GmbH**

(6) Address: **12059 Berlin, Germany**

(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. 41300112P.

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

EN 60079-29-1:2007
EN 50104:2010
EN 50271:2010

This supplement to the EC-type examination certificate covers the measuring function for methane, propane, 2-butanone, acetone, ethanol, ethyl acetate, mineral spirit 65/95, 1-propanol, 2-propanol, propene, toluene, hydrogen and 1-ethoxy-2-propanol in the measuring range 0 - 100 % LEL and of oxygen (measurement of inertisation) in the measuring ranges 0 - 10 %(v/v) and 0 - 25 %(v/v).
This supplement to the EC-type examination certificate covers devices with software version 1.07.

(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.

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

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

II 1G Ex ia IIC T4 Ga **II 2D Ex ia IIIC T130°C Db**	**PrimaX I**
II 2G Ex d ia [ia] IIC T4 Gb **II 2D Ex tb ia [ia] IIIC T130°C Db IP67**	**PrimaX P**

DEKRA EXAM GmbH
Bochum, dated 10. April 2012

Signed: Müller	Signed: Kiesewetter
Certification body	Special services unit

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

(13) Appendix to

(14) **3. Supplement to the EC-Type Examination Certificate**
BVS 10 ATEX E 009 X

(15) 15.1 Subject and type

Gas Detector type PrimaX I and PrimaX P

15.2 Description

The gas detection apparatus PrimaX I is a fixed device for the measurement of oxygen or a toxic gas. The measurement is done with an electrochemical sensor. A 2-wire 4-20 mA interface serves as power supply and for transmission of the measured value. The apparatus can be optionally equipped with a HART-interface for maintenance and parametrization.

The gas detection apparatus PrimaX P is a fixed device for the measurement of flammable gases, of oxygen or a toxic gas. The measurement is done with a catalytic combustion sensor or an electro-chemical sensor. A 3-wire 4-20 mA interface serves as power supply and for transmission of the measured value. The apparatus can be optionally equipped with a HART-interface for maintenance and parametrization. Alternatively a HART/relay-module can be used which provides a fault and an alarm relay in addition to the HART-interface.

15.3 Parameters

BVS 10 ATEX E 009 X and supplements 1 and 2

(16) Test and assessment report

PFG-no. 41300112P as of 30/03/2012

(17) Special conditions for safe use

- see BVS 10 ATEX E 009 X and supplements 1 and 2
- The HART-interface is subject of this type examination certificate only for the purpose of maintenance and parametrization.
- When the HART-/relay module is used the alarm shall be configured latching.
- If a device with a combustible sensor is exposed to vibrations, calibration shall be done in sufficient short intervals until it is verified that the device is not affected by the vibration stress.
- After exposure of gas above the measuring range, the sensor has to be immediately calibrated/adjusted, independent of the calibration interval. In the case of an adjustment the sensitivity of the sensor has to be rechecked again after 24 hours.

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, 10. April 2012
PFG-Kie/Bre

Certification body

Special services unit

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

Translation

(1) # 4. 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: **BVS 10 ATEX E 009 X**

(4) Equipment: **Gas Detector type PrimaX P**

(5) Manufacturer: **MSA AUER GmbH**

(6) Address: **12059 Berlin, Germany**

(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. 41300112P NI.

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

EN 60079-29-1:2007
EN 50104:2010
EN 50271:2010

This supplement to the EC-type examination certificate covers a variant of the equipment which is equipped with a 4-wire 4-20 mA interface.
This supplement to the EC-type examination certificate covers the measuring function for methane, propane, 2-butanone, acetone, ethanol, ethyl acetate, mineral spirit 65/95, 1-propanol, 2-propanol, propene, toluene, hydrogen and 1-ethoxy-2-propanol in the measuring range 0 - 100 % LEL and of oxygen (measurement of inertisation) in the measuring ranges 0 - 10 %(v/v) and 0 - 25 %(v/v).
This supplement to the EC-type examination certificate covers devices with software version 1.08.

(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.

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

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

II 2G Ex d ia [ia] IIC T4 Gb
II 2D Ex tb ia [ia] IIIC T130°C Db IP67

PrimaX P

DEKRA EXAM GmbH
Bochum, dated 25. September 2012

Signed: Müller	Signed: Kiesewetter
Certification body	Special services unit

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

(13) Appendix to

(14) **4. Supplement to the EC-Type Examination Certificate**
BVS 10 ATEX E 009 X

(15) 15.1 Subject and type

Gas Detector type PrimaX P

15.2 Description

The gas detection apparatus PrimaX P is a fixed device for the measurement of flammable gases, of oxygen or a toxic gas. The measurement is done with a catalytic combustion sensor or an electro-chemical sensor. A 3-wire or a 4-wire 4-20 mA interface serves as power supply and for transmission of the measured value. The apparatus can be optionally equipped with a HART-interface for maintenance and parametrization. Alternatively a HART/relay-module can be used which provides a fault and an alarm relay in addition to the HART-interface.

15.3 Parameters

BVS 10 ATEX E 009 X and supplements 1 and 2

(16) Test and assessment report

PFG-no. 41300112P NI as of 25/09/2012

(17) Special conditions for safe use

- see BVS 10 ATEX E 009 X and supplements 1 and 2
- see BVS 10 ATEX E 009 X supplement 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.

DEKRA EXAM GmbH
44809 Bochum, 25. September 2012
PFG-Kie/Bre

Certification body | Special services unit

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