IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BVS 10.0043X**

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Certificate history:

Status: **Current**

Issue No: 7

Issue 6 (2024-05-21)
Issue 5 (2021-03-10)
Issue 4 (2016-07-04)
Issue 3 (2013-06-19)
Issue 2 (2012-05-02)
Issue 1 (2011-03-25)
Issue 0 (2010-05-18)

Date of Issue: 2024-07-31

Applicant: **MSA EUROPE GmbH**
Schlüsselstraße 12
8645 Rapperswil-Jona
Switzerland

Equipment: **Gas Detector type PrimaX I and PrimaX P**

Optional accessory:

Type of Protection: **Equipment protection by flameproof enclosures "d", Equipment protection by intrinsic safety "i", Equipment dust ignition protection by enclosure "t"**

Marking: Ex ia IIC T4 Ga for PrimaX I

Ex db ia [ia] IIC T4/T6 Gb
Ex tb ia [ia] III C T130°C/T85°C Db for PrimaX P

Approved for issue on behalf of the IECEx Certification Body: **Dr Franz Eickhoff**

Position: **Senior Lead Auditor, Certification Manager and officially recognised expert**

Signature:
(for printed version)

Date:
(for printed version) 2024-07-31

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Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

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Date of issue: 2024-07-31

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Manufacturer: **MSA (China) Safety Equipment Co., Ltd.**
No. 8 Rui En Lane, Xingpu Road
Suzhou Industrial Park, Jiangsu
China

Manufacturing locations:

MSA (China) Safety Equipment Co., Ltd.
No. 8 Rui En Lane, Xingpu Road
Suzhou Industrial Park, Jiangsu
China

General Monitors Ireland Ltd
Ballybrit Business Park
Galway
Ireland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/BVS/ExTR10.0063/06

Quality Assessment Reports:

DE/BVS/QAR10.0012/10 GB/CML/QAR22.0009/01

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Gas detector type PrimaX I:

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 (PrimaX Ox-Tox Sensor).

The gas detector type PrimaX I is designed with an antistatic plastic housing. The surface resistance of the housing is ≤ 10^9 W.

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 ≤ 10^9 W, 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 to an external HART - Handheld Controller can be done by a special HART - plug-in connector.

Gas detector 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, depending on construction, one changeable intrinsically safe electrochemical sensor (PrimaX Ox-Tox Sensor) or one sensor in type of protection Flameproof Enclosure (PrimaX Ex Sensor) 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 to an external intrinsically safe HART - Handheld Controller can be done by a special HART - plug-in connector.

Ratings
See Annex

Marking
See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:
For Gas Detector PrimaX I and PrimaX P:

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

Avoid electrostatic charge on the temporary used calibration cap when used for calibration.

For Gas Detector PrimaX I:

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

For Gas Detector PrimaX P:

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 3 of IEC 60079-1:2014. 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**, the complete device type **PrimaX P** is in accordance
to temperature class T6/T85 °C, ambient temperature range -40 °C ≤ T_a ≤ +40 °C or
to temperature class T4/T130 °C, ambient temperature range -40 °C ≤ T_a ≤ +70 °C.

In case of using the **PrimaX Ox-Tox-Sensor**, the complete device type **PrimaX P** is in accordance
to temperature class T4/T130 °C, ambient temperature range -40 °C ≤ T_a ≤ +70 °C.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Update to the current status of standards.

Dust approval for PrimaX I has been withdrawn.

Electronic circuit slightly modified.

Minor changes to the enclosure.

Option: Sensor MSA XCell XXX (IECEx FTZU 09.0024U) removed.

Annex:

BVS_10_0043X_MSA Europe_Annex_issue7.pdf

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Annex

Ratings for Gas detector type PrimaX I:

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		100	mA
Maximum input power	P_i		700	mW
Maximum internal capacity	C_i		negligible	
Maximum internal inductivity	L_i		negligible	

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

Maximum output voltage	U_o	DC	28	V	
Maximum output current		I_o		100	mA
Maximum output power	P_o		700	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		

Ambient temperature range (**Ex ia IIC T4 Ga**): -40 °C ≤ T_a ≤ +70 °C

Ratings for Gas detector type PrimaX P:

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

Nominal voltage	U_{max}		30	V
Maximum input voltage	U_m	DC	60	V

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

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	U_o		2.7	V	
Maximum output current		I_o		137	mA
Maximum output power	P_o		185	mW	
Maximum external capacity	C_o		1	nF	
Maximum external inductivity	L_o		10	µH	
Maximum input voltage	U_i		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		

Ambient temperature range

T4/T130 °C:	-40 °C up to +70 °C
T6/T85 °C:	-40 °C up to +40 °C

See additional “Conditions of Use” for Ex Equipment.

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Annex

Marking PrimaX I:
Name and address of the manufacturer
Type PrimaX I
Ex ia IIC T4 Ga
-40 °C ≤ T_a ≤ +70 °C
Serial number
Certification number

Marking PrimaX P Main housing:
Name and address of the manufacturer
Type PrimaX P
Ex db ia [ia] IIC T4/T6 Gb
Ex tb ia [ia] IIIC T130°C/T85°C Db
T4/T130 °C -40 °C ≤ T_a ≤ +70 °C
T6/T85 °C -40 °C ≤ T_a ≤ +40 °C
Serial number
Certification number

Marking PrimaX Ex-Sensor:
Name and address of the manufacturer
Type PrimaX Ex Sensor
Ex db IIC T4/T6 Gb
Ex tb IIIC T130°C/T85°C Db
T4/T130 °C -40 °C ≤ T_a ≤ +70 °C
T6/T85 °C -40 °C ≤ T_a ≤ +40 °C
Serial number

Marking PrimaX Ox-Tox-Sensor:
Name and address of the manufacturer
Type PrimaX Ox-Tox Sensor
Ex ia IIC T4 Ga
Ex ia IIIC T135°C Db
-40 °C ≤ T_a ≤ +70 °C
Serial number