

# EU-Type Examination Certificate

Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

EU-Type Examination Certificate Number: **BVS 10 ATEX E 009 X** Issue: **02**

Equipment: **Gas detection transmitters type PrimaX I and type PrimaX P**

Manufacturer: **MSA EUROPE GmbH**

Address: **Schlüsselstraße 12, 8645 Rapperswil-Jona, Switzerland**

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Reports BVS PP 10.2129 EU, and PFG-no. 41300112P NVIII.

This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 10 ATEX E 009 X including supplements 1 to 10.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018**

**EN 60079-1:2014**

**EN 60079-11:2012**

**EN IEC 60079-31:2024**

**EN 60079-29-1:2016+A1:2022+A11:2022**

**EN 50104:2019+A1:2023**

**EN 50271:2018**

**General requirements**

**Flameproof enclosure “d”**

**Intrinsic Safety “i”**

**Protection by Enclosure “t”**

**Gas detectors – Performance requirements of detectors for flammable gases**

**Electrical equipment for the detection and measurement of oxygen – Performance requirements and test methods**

**Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen – Requirements and tests for apparatus using software and/or digital technologies**

If the sign “X” is placed after the certificate number, it indicates that the product is subject to the “Specific Conditions of Use” listed under item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the product shall include the following:



**II 1G Ex ia IIC T4 Ga**

for PrimaX I

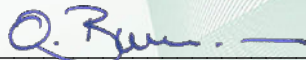


**II 2G Ex db ia [ia] IIC T4/T6 Gb**

**II 2D Ex tb ia [ia] IIIC T130°C / T85°C Db**

for PrimaX P

DEKRA Testing and Certification GmbH  
Bochum, 2025-10-22



Managing Director

13 **Appendix**  
 14 **EU-Type Examination Certificate**  
**BVS 10 ATEX E 009 X issue 02**

15 **Product description**

15.1 **Subject and type**

Gas detection transmitters type PrimaX I and type PrimaX P

15.2 **Description**

Gas detection transmitter type PrimaX I

The device type PrimaX I is a fixed equipment for the measurement of oxygen or of a toxic gas in ambient air. The measurement is done with one electrochemical sensor (PrimaX Ox-Tox Sensor).

The transmitter is designed with an antistatic plastic housing. The surface resistance of the housing is  $\leq 10^9 \Omega$ .

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.

A 2-wire 4-20 mA interface serves as power supply and for transmission of the measured value. The 2-wire connection to the gas detection transmitter type PrimaX I is done via a M25 cable gland.

As an option, the transmitter type PrimaX I can be equipped with a HART - interface for maintenance and parametrization. The connection to an external HART- Handheld Controller can be done by a special HART - plug-in connector.

Gas detection transmitter type PrimaX P

The device type PrimaX P is a fixed equipment for the measurement of flammable gases, of oxygen or of a toxic gas in ambient air.

The transmitter contains, depending on construction, one changeable intrinsically safe electrochemical sensor (PrimaX Ox-Tox Sensor) or one catalytic combustion sensor in type of protection Flameproof Enclosure (PrimaX Ex Sensor) for gas measurement.

A 3-wire or a 4-wire 4-20 mA interface serves as power supply and for transmission of the measured value. The connection to the non-intrinsically safe power supply-/signal circuit is done via a cable gland (d).

As an option, the transmitter type PrimaX P can be 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. The connection to an external intrinsically safe HART – Handheld Controller can be done by a special HART - plug-in connector.

**Reason for this issue**

Update to the current editions of standards, software modification and removal of discontinued electrochemical sensor part-no. 10148289 for oxygen.

## 15.3 Parameters

### 15.3.1 Gas detection transmitter type PrimaX I:

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

15.3.1.2 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	$\mu$ H
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

15.3.1.3 Ambient temperature range (Ex ia IIC T4 Ga):  $-40\text{ °C} \leq T_a \leq +70\text{ °C}$

### 15.3.2 Gas detection transmitter 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	$U_{max}$		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	$U_o$		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	$\mu$ H
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

15.3.2.4 Ambient temperature range

T4 / T130 °C:	$-40\text{ °C}$ up to $+70\text{ °C}$
T6 / T85 °C:	$-40\text{ °C}$ up to $+40\text{ °C}$

See additional Special conditions for safe use

#### 15.4 Measuring function for explosion protection

This EU-type examination certificate covers:

- equipment PrimaX I and PrimaX P with software version V1.19
- the measurement of methane, propane, acetone, FAM-Benzine 65/95, 2-butanone, ethanol, ethyl acetate, 1-Ethoxy-2-propanol, n-nonane, 1-Propanol, 2-Propanol, propene, toluene, and hydrogen mixed with air in the measuring range 0 - 100 % LEL (PrimaX P with catalytic combustion sensor part-no. 10112716/10109151)
- the measurement of oxygen (measurement of inertisation) in the measuring ranges 0 - 10 %(v/v) and 0 - 25 %(v/v) (PrimaX I and PrimaX P with electrochemical sensor part-no. 10112718/10073091)
- use of the following outputs for safety relevant purposes:
  - display
  - 4-20 mA output
  - relays
- use of the following accessories:
  - Sensor Gard (part-no. 10113033)
  - Flow through adapter (part-no. 10113031)
  - Calibration cap (part-no. 10112789)
  - Remote calibration adapter CalGard (part-no. 10150921)

The EU-type examination includes the following deviations from the operating conditions required by EN 60079-29-1 or EN 50104:

- Extended range of temperature at operation:
  - 40 °C to +70 °C (operation with catalytic combustion sensor part-no. 10112716/10109151)
  - 30 °C to +55 °C (operation with electrochemical sensor part-no. 10112718/10073091)
- Extended range of pressure at operation: 80 kPa to 120 kPa (operation with catalytic combustion sensor part-no. 10112716/10109151)
- Extended range of humidity of the measured gas: 15 % RH to 90 % RH

#### 16 Report Number

PFG-no. 41300112P NVIII, as of 2025-09-30  
 BVS PP 10.2129 EU, as of 2024-07-17

## 17 Specific Conditions of Use

### 17.1 For Gas Detection Transmitters PrimaX I and PrimaX P:

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

If the HART-/relay - module is used:

- The HART - interface is subject of this EU-type examination certificate only for the purpose of maintenance and parametrization.
- The alarm shall be parametrized latching.
- The alarm relay delay time shall be set to 0 s.
- The failure relay shall be parametrized normally energized.
- The failure relay delay time shall be set to 0 s.
- Calibration is only signaled on the 4-20 mA output by the service current. Therefore, the 4-20 mA output shall be monitored at automatic calibration, if the sum of the application times parametrized for zero gas and span gas application and the idle time exceeds 15 minutes, and at manual calibration.

### 17.2 For Gas Detection Transmitters PrimaX I:

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

### 17.3 For Gas Detection Transmitters 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 EN 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  $-40\text{ °C} \leq T_a \leq +40\text{ °C}$  or to temperature class T4/T130 °C, ambient temperature range  $-40\text{ °C} \leq T_a \leq +70\text{ °C}$ .

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  $-40\text{ °C} \leq T_a \leq +70\text{ °C}$ .

## 18 Essential Health and Safety Requirements

Met by compliance with the requirements mentioned in item 9.

For this product the standard EN IEC 60079-31:2024 is equivalent to the harmonized standard EN 60079-31:2014 in terms of safety.

## 19 Remarks and additional information

Drawings and documents are listed in the confidential reports.