

EU-TYPE EXAMINATION CERTIFICATE



Component intended for use on/in Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

EU-Type Examination Certificate Number: **UL 23 ATEX 3072U Rev. 0**

Component: **Optical Gas Sensors**

Manufacturer: **SIA MIPEX**

Address: **Valkas Iela 2b, Daugavpils, 5417 Latvia**

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

UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the 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 confidential report no. **US/UL/ExTR23.0074/00.**

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

EN IEC 60079-0:2018

EN 60079-11:2012

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

The sign "U" placed behind the certificate number indicates that this certificate should not be confused with certificates issued for equipment or protective systems. This partial certification may be used as a basis for certification of an equipment or protective systems. "Schedule of limitations" is listed under item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance to 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 the certificate.

The marking of the product shall include the following (marking is provided in the Schedule as a part of item 15, if applicable):

 **I M1 / II 1G Ex ia I Ma / Ex ia IIC Ga**

Certification Manager
Thomas Wilson

This is to certify that the sample(s) of the Component described herein ("Certified Component") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the component sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured component. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all products to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2023-10-16

Notified Body

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Schedule

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[15] Description of Component:
 The MIPEX-02 models utilise the same circuit and components. The PCB for each model is encapsulated within the enclosure on the IR LED side of the PCB Viksint Grade A, TU 38.103508-81 which has an operating temperature range of -60°C to +200°C is used. On the connection pin side of the PCB, either Viksint Grade A, TU 38.103508-81 or GIRLEN 3 compound which has an operating temperature range of -60°C to +125°C may be used, only the connection pins, the IR LED and IR receiver module are not fully encapsulated.

The MIPEX-02-X-I-1.1X, MIPEX 02-X-II-1.1X and MIPEX-03-X-XX-1.X models are housed in cylindrical stainless steel enclosures with a label wrapped around the outside, an optional gauze disk can be applied to the entry.

The MIPEX-02-X-I-2.1X, MIPEX-02-X-II-2.1X and MIPEX-03-X-XX-2.X models are housed in cylindrical stainless steel enclosures with additional entries machined around the side. A smaller label wrapped is around the outside and an optional gauze disk and strip set can be applied to the entries.

The MIPEX-02-X-I-3.1X, MIPEX-02-X-II-3.1X and MIPEX-03-X-XX-3.X models are housed in cylindrical plastic enclosures with a label wrapped around the outside, an optional gauze disk can be applied to the entry.

Nomenclature for MIPEX -02 Sensors:

MIPEX-02	-B	-C	-D	.1	Z
I	II	III	IV	V	VI

I MIPEX Model Number

II Target gas
 1 - CH4 (methane)
 2 - C3H8 (propane, CmHn – hydrocarbons)
 3 – CO2 (carbon dioxide)
 4 – CH4/CH4+C2H6 (methane, methane + ethane)

III Electrical equipment group according to ATEX directive 2014/34/EU: I or II

IV Housing type:
 1 - stainless steel
 2 - stainless steel, with additional side diffusion holes intended for decreasing response time T90.
 3 - plastic

V Interface:
 1 - UART, 4 pins

VI Pins length:
 A – 4.6mm

Nomenclature for MIPEX -03 Sensors:

MIPEX-03	-B	-C	-D	.E
I	II	III	IV	V

I MIPEX Model Number

II Target gas
 1 - CH4 (methane)
 2 - C3H8 (propane), CmHn – (hydrocarbons)
 4 – CH4/CH4+C2H6 (methane, methane + ethane)

III RX-code:
 R – calibration gas and range
 X – temperature class and variability

IV Housing type:
 1 – sensor housing made of stainless steel, with diffusion holes in its reflecting cover (type “1”)
 2 – sensor housing made of stainless steel, with diffusion holes in its reflecting cover and with additional side diffusion holes (type “2”)
 3 – sensor housing made of plastic LEXAN™, with diffusion holes in its reflecting cover (type “3”)



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V Interface:
2 – analog output, 3 pins
3 – UART and analog output, 5 pins

Temperature range
-55°C ≤ Ta ≤ 60°C (for MIPEX-02 series)
-40°C ≤ Ta ≤ 60°C (for MIPEX-03 series)

Electrical data

Intrinsically safe specifications:

Ui = 5.0V, Ii = 450mA, Pi = 0.25W, Ci = 38.8µF, Li = 0 (for the MIPEX 02 series)

Ui = 5.0V, Ii = 200mA, Pi = 0.13W, Ci = 26µF, Li = 0 (for the MIPEX 03 series)

Routine tests

None

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Descriptive Documents

The scheduled documents are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

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Schedule of limitations:

- The MIPEX-02-X-X-3.1X and MIPEX-03-X-XX-3.X models of the equipment are housed within a plastic enclosure. The enclosure is considered to be source of electrostatic discharge which could become source of ignition and therefore requires the following to be placed on the certificate and the following guidance included within the manual: POTENTIAL ELECTROSTATIC CHARGING HAZARD – CLEAN ONLY WITH A DAMP CLOTH. The external part of the sensor can be sources of risk of electrostatic discharge. Take it into account during installation and operation of the sensor in end-user equipment.
- The MIPEX-02-X-X-1.1X, MIPEX-02-X-X-2.1X, MIPEX-03-X-XX-1.X and MIPEX-03-X-XX-2.X models of the equipment did not meet the requirements of Clause 7.5 of IEC 60079-0. The equipment was tested and found to have a 17.4pF capacitance.
- All models are suitable for equipment with temperature classes T1 – T5 at maximum ambient temperature of 60°C.

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.