



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

Ex COMPONENT CERTIFICATE

Certificate No.: **IECEX UL 23.0062U** Page 1 of 4 [Certificate history:](#)
Issue 0 (2023-10-16)

Status: **Current** Issue No: 1

Date of Issue: 2024-04-23

Applicant: **SIA MIPEX**
Valkas Iela 2b
Daugavpils 5417
Latvia

Ex Component: Optical Gas Sensors, Models MIPEX-02-X-I-1.1X, MIPEX-02-X-II-1.1X and MIPEX-02-X-I-2.1X, MIPEX-02-X-II-2.1X, MIPEX-02-X-I-3.1X and MIPEX-02-X-II-3.1X, MIPEX-02-3-I-D.1 A, MIPEX-02-3-II-D.1 A.

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Intrinsic Safety "ia"**

Marking: Ex ia I Ma / Ex ia IIC Ga

Approved for issue on behalf of the IECEx
Certification Body:

Andreas Koehler

Position:

Certification Program Specialist GMA

Signature:
(for printed version)

Date:
(for printed version)

2024-04-23

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

UL Solutions (US)
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America





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Manufacturer: **SIA MIPEX**
Valkas Iela 2b
Daugavpils 5417
Latvia

Manufacturing
locations: **SIA MIPEX**
Valkas Iela 2b
Daugavpils 5417
Latvia

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 component 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 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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 component listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[US/UL/ExTR23.0074/00](#)

[US/UL/ExTR23.0074/01](#)

Quality Assessment Report:

[DK/ULD/QAR23.0001/00](#)



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Ex Component(s) covered by this certificate is described below:

The MIPEX series of optical sensors consist of six models, the MIPEX-02-X-I-1.1X, MIPEX-02-X-II-1.1X, MIPEX-02-X-I-2.1X, MIPEX-02-X-II-2.1X, MIPEX-02-X-I-3.1X and MIPEX-02-X-II-3.1X. The equipment is supplied with the following power supply and monitoring system combined parameters:

$U_i = 5.0V$, $I_i = 450mA$, $P_i = 0.25W$, $C_i = 38.8\mu F$, $L_i = 0$ (for the MIPEX 02 series)

The MIPEX-02 models use 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 $-60^{\circ}C$ to $+200^{\circ}C$ 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 $-60^{\circ}C$ to $+125^{\circ}C$ 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 and MIPEX 02-X-II-1.1X 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 and MIPEX-02-X-II-2.1X 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 and MIPEX-02-X-II-3.1X models are housed in cylindrical plastic enclosures with a label wrapped around the outside, an optional gauze disk can be applied to the entry.

Please see Annex for additional information.

SCHEDULE OF LIMITATIONS:

1. The MIPEX-02-X-X-3.1X model is 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.
2. The MIPEX-02-X-X-1.1X and MIPEX-02-X-X-2.1X models did not meet the requirements of Clause 7.5 of IEC 60079-0. These models were tested and found to have a 17.4pF capacitance.
3. All models are suitable for equipment with temperature classes T1 – T5 at maximum ambient temperature of $60^{\circ}C$.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Corrects typo on the internal label of the -02 models, new part number added to drawings and discontinuation of -03 models.

Annex:

[Annex to IECEx UL 23.0062U Issue 1.pdf](#)



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Annex to Certificate No.:

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TYPE DESIGNATION

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

PARAMETERS RELATING TO THE SAFETY

U_i = 5.0V, I_i = 450mA, P_i = 0.25W, C_i = 38.8μF, L_i = 0 (for the MIPEX 02 series)



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MARKING

Marking has to be readable and indelible; it has to include the following indications:

-02 Sensor:

mipex[®]
TECHNOLOGY

RoHS
COMPLIANT

CE 0539



Ex ia I Ma / Ex ia IIC Ga IECEx UL 23.0062U
IM1/II 1 G Ex ia I Ma / Ex ia IIC Ga UL 23 ATEX 3072U
C I, Div 1, Gr A, B, C, D; C I, Zone 0, AEx ia IIC Ga; Ex ia IIC Ga

Valkas 2b, Daugavpils,
Latvia, LV-5417

-55°C ≤ Ta ≤ +60°C

MIPEX-02-2-II-1.1A(71)



Mfg date: 09.2023 SN: 0201133085

