



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 ULD 11.0004X**

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Status: **Current**

Issue No: 12

Date of Issue: 2023-04-14

Applicant: **Crowcon Detection Instruments Ltd.**
172 Brook Drive
Milton Park
Abingdon
Oxfordshire
OX14 4SD
United Kingdom

Certificate history:

Issue 11 (2021-12-10)
Issue 10 (2021-07-27)
Issue 9 (2021-04-30)
Issue 8 (2021-03-10)
Issue 7 (2017-12-04)
Issue 6 (2016-04-29)
Issue 5 (2015-10-19)
Issue 4 (2015-05-20)
Issue 3 (2013-12-02)
Issue 2 (2012-07-02)

Equipment: **Gas-Pro Portable Hand-held Gas Detector**

Optional accessory: Pump, Flow Plate

Type of Protection: **Flameproof "db" and Intrinsic Safety "ia"**

Marking: Ex db ia IIC T4 Gb

Ex ia IIC T4 Ga

-20°C ≤ Ta ≤ +55°C

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

Signature:
(for printed version)

Date:
(for printed version)

2023-04-14

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2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

UL International DEMKO A/S
Borupvang 5A
DK-2750 Ballerup
Denmark





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Manufacturer: **Crowcon Detection Instruments Ltd.**

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Milton Park
Abingdon
Oxfordshire
OX14 4SD
United Kingdom

Manufacturing
locations:

Crowcon Detection Instruments Ltd. Crowcon Detection Instruments

172 Brook Drive
Milton Park
Abingdon
Oxfordshire
OX14 4SD
United Kingdom

(Beijing) Ltd.

Floor 3, Building 7, No.156, 4th Jinghai
Rd, DBA
Beijing City 101111
China

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 60079-1:2014-06 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

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 Reports:

DK/ULD/ExTR11.0005/00
DK/ULD/ExTR11.0005/03
DK/ULD/ExTR11.0005/06
DK/ULD/ExTR11.0005/09

DK/ULD/ExTR11.0005/01
DK/ULD/ExTR11.0005/04
DK/ULD/ExTR11.0005/07
DK/ULD/ExTR11.0005/10

DK/ULD/ExTR11.0005/02
DK/ULD/ExTR11.0005/05
DK/ULD/ExTR11.0005/08
DK/ULD/ExTR11.0005/11

Quality Assessment Reports:

DE/TUR/QAR16.0016/05

GB/BAS/QAR06.0070/10



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Gas-Pro is a portable, hand-held, re-chargeable battery operated Gas Detector used for the detection of Combustible and Toxic gases, and oxygen depletion. The unit functions as an alarm and data-logger. The circuitry is housed within a polymeric enclosure manufactured from clear polycarbonate over-moulded with static-dissipative TPE in orange, red, or black with openings in the TPE providing display windows. Battery charging and data transfer to the equipment is by the use of an optional charging and communications cables, for use in a safe area only. An optional pump is available to facilitate gas sampling.

The Main PCB is divided into separate power limiting nets to distribute power to processor, gas sensors, vibrator, sounder and pump drive circuitry. It interfaces to a charging and communications Interface and to the separate Display PCB. Up to 4 Gas Sensors are fitted of the infrared, pellistor, PID, toxic and oxygen types. The infrared, pellistor and PID type are suitably certified components. All sensors are located within energy limited circuitry.

The equipment is designed to be used with a defined selection of toxic/O₂ electrochemical gas sensors and one or more flammable/pellistor gas sensor. The certification type is assigned at the time of manufacture based on the sensors fitted to the instrument. Adding or removing sensors from an instrument configuration is forbidden as it can change the certification type.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Only connect to Gas-Pro in a safe area for charging or communications.
- Gas-Pro must not be charged or have communication to the device, at ambient temperatures outside of the temperature range 0°C to 40°C.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Addition of red overmoulded variant.

Issue 2: Correction of CoC to add missing T-code to markings on page 1 (T4).

Issue 3: Addition of new Main PCB types ECAD-000106 and ECAD-000106-01.

Issue 4: Standard upgrade, change of address, Polycarbonate enclosure modification and addition of alternate GripClip top ring design.

Issue 5: Addition of alternative marking drawing containing info for other certification agencies.

Issue 6: Modification of existing GasPro design to reduce EMC. Alternative battery and sensors added to range.

Issue 7: Revision of rear enclosure drawing. Addition of the lower ambient charging temperature and update of the IEC 60079-1 standard to the current edition. Addition of additional sensor options also incorporated. Scheduled drawing list updated to reflect the revised construction.

Issue 8: Addition of alternative electrochemical sensor type. Introduced "ia" variant, revised markings and added alternative manufacturing location. Revised vibrator circuit for Gas-Pro Main PCBs. Minor change to battery construction.

Issue 9: No changes to the equipment. Evaluation to standard IEC 60079-0 latest edition.

Issue 10: Addition of alternative electrochemical Toxic/O₂ sensors.

Issue 11: Updates to permit PCB modifications so that an alternative processor can be used.

Issue 12: Main PCB modification.

Annex:

[Annex to IECEx ULD 11.0004X Issue 12.pdf](#)



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TYPE DESIGNATION

The Main PCB is divided into separate power limiting nets to distribute power to processor, gas sensors, vibrator, sounder and pump drive circuitry. It interfaces to a charging and communications Interface and to the separate Display PCB. Up to 4 Gas Sensors are fitted of the infrared, pellistor, PID, toxic and oxygen types. The infrared, pellistor and PID type are suitably certified components. All sensors are located within energy limited circuitry.

The equipment is designed to be used with a defined selection of toxic/O₂ electrochemical gas sensors and one or more flammable/pellistor gas sensor. The certification type is assigned at the time of manufacture based on the sensors fitted to the instrument. Adding or removing sensors from an instrument configuration is forbidden as it can change the certification type.

If any of the following sensors in Table 1 are fitted to the equipment, then the certification type is "Ex db ia".

Table 1 – Sensors leading to Certification Type "Ex db ia"	
Sensor Part No	Detector Type
SS0151	Pellistor
SS0101	Pellistor
SS0280	Infrared CO ₂
SS0201	Infrared flammable

If none of the sensors in Table 1 are fitted to the equipment, then the certification type is "Ex ia".



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The Main PCB types determine the type of sensors fitted as follows:

Main PCB Assy No. (Crowcon Part Number)	Sensors Configuration
1004-1080 (S013005)	Toxic (Universal)
	Toxic (Single)
	Combustible (IR)
	Oxygen
1004-1047 (S013001)	Toxic (Universal)
	Pellistor or PID (5V max)
	Toxic (Single)
	Oxygen
1004-1047-01 (S013021)	Toxic (Universal)
	Pellistor or PID (4.25V max)
	Toxic (Single)
	Oxygen
1004-1042 (S013002)	Toxic (Universal)
	Pellistor or PID (5V max)
	Combustible (IR)
	Oxygen
1004-1042-01 (S013022)	Toxic (Universal)
	Pellistor or PID (4.25V max)
	Combustible (IR)
	Oxygen
ECAD-000106 (S013004)	Toxic (Universal)
	Pellistor or PID (5V max)
	Pellistor or PID (5V max)
	Oxygen
ECAD-000106-01 (S013024)	Toxic (Universal)
	Pellistor or PID (4.25V max)
	Pellistor or PID (4.25V max)
	Oxygen

The Display PCB consists of LCD Module, Display Processor, LED backlight, interface circuits to Main PCB and LED lights for displaying status of the unit. The LCD Module consists of LCD with backlight. The Battery is a re-chargeable Li-Ion battery wired to the Main PCB. A flow plate used to facilitate the flow of gases over the sensor heads is screwed to the front of the Gas-Pro enclosure.

PARAMETERS RELATING TO THE SAFETY

Um: 9.1 V



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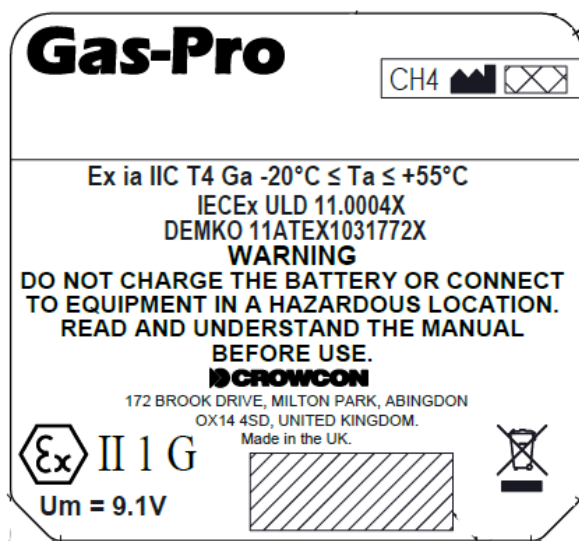
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MARKING

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

Gas-Pro Ex ia IIC T4 Ga

Gas-Pro Ex db ia IIC T4 Gb

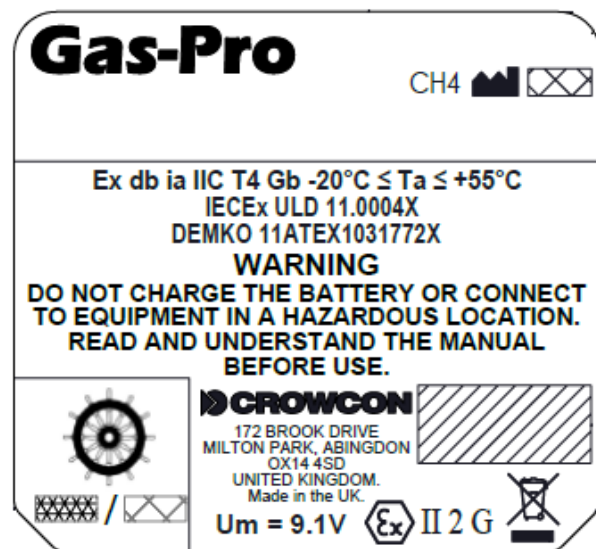
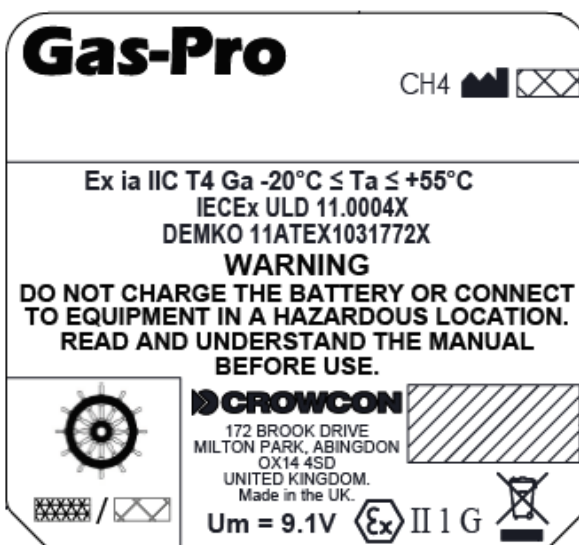


Note: Hatched areas contain CE mark and Notified Body number.

Or alternatively, the equipment may be marked with the following:

Gas-Pro Ex ia IIC T4 Ga

Gas-Pro Ex db ia IIC T4 Gb



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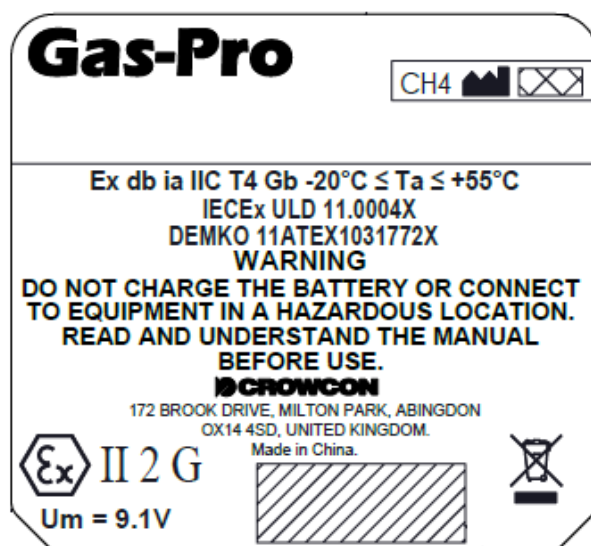
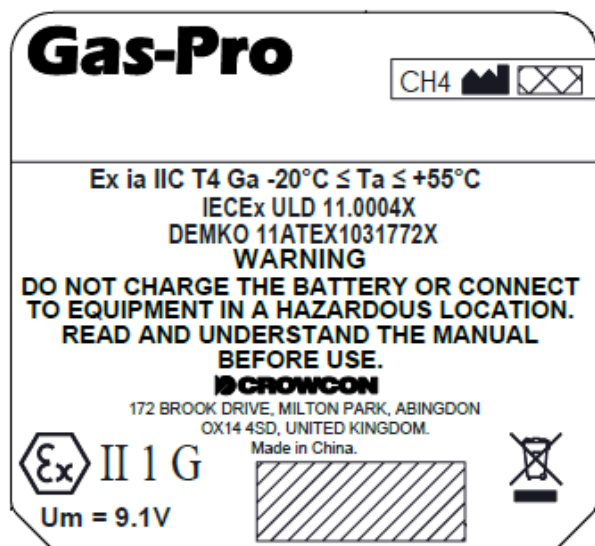
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Or alternatively, the equipment may be marked with the following:

Gas-Pro Ex ia IIC T4 Ga

Gas-Pro Ex db ia IIC T4 Gb,



Note: Hatched areas contain CE mark and Notified Body number.

Either of the markings shown (not both) is affixed to the equipment.

LIST OF CERTIFIED COMPONENTS

The following additional previous editions of Standards noted under the "Standards" section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the "Standards" section.

Product	Certificate Number	Standards
SGX Sensortech VQ500 series Sensing Heads	IECEX SIR 04.0014U	IEC 60079-0:2011, Edition: 6.0 IEC 60079-1:2014, Edition: 7.0
SGX Sensortech MP-72xx or VQ548MP	IECEX ULD 14.0002U	IEC 60079-0:2011, Edition: 6.0 IEC 60079-11:2011, Edition: 6.0