1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
Directive 2014/34/EU

3 EU - Type Examination Certificate Number: **Baseefa04ATEX0383 – Issue 17**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **Gasman Flammable Gas Detector**

5 Manufacturer: **Crowcon Detection Instruments Ltd**

6 Address: **172 Brook Drive, Milton Park, Abingdon, Oxfordshire, OX14 4SD**

7 This re-issued certificate extends EC Type Examination Certificate No. **Baseefa04ATEX0383** to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, 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.

8.1 The original certificate was issued by SGS Baseefa Ltd (UK Notified Body 1180). It, and any supplements previously issued by SGS Baseefa Ltd have been transferred to the supervision of SGS Fimko Oy (EU Notified Body 0598). The original certificate number is retained.

The examination and test results are recorded in confidential Report No. **See Certificate History**

9 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**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

See certificate schedule

SGS Fimko Oy Customer Reference No. **0249** Project File No. **20/0639**

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13 # Schedule

14 ## Certificate Number Baseefa04ATEX0383 – Issue 17

15 Description of Product

The Gasman Flammable Gas Detector is designed to detect the presence of flammable gas, give a visual indication of the concentration, and give audible and visual alarms if a preset level is exceeded. It comprises a rechargeable battery, a flammable gas sensor head, electronic circuits on printed circuit boards, a liquid crystal display, LED's and a piezo sounder, all contained in a plastic enclosure providing a degree of protection of at least IP20. External contacts are provided for recharging, and for serial data communications.

The flammable gas sensor module fitted is known as a flammable i-module. The flammable i-module can be replace in the apparatus with an oxygen i-module (for oxygen deficiency detection), or a toxic i-module. The permitted i-modules are listed in the User Manual provided by the manufacturer.

The equipment may be fitted with either a Pellistor type sensor or a Molecular Property Spectrometer (MPS) sensor. The type of flammable gas sensor fitted to the equipment depends on the explosive atmosphere that the equipment is intended to be used in.

When fitted with a pellistor type sensor the equipment is suitable for explosive atmospheres requiring an equipment protection level (EPL) Gb and is marked accordingly. When fitted with the MPS type sensor the equipment is suitable for explosive atmospheres requiring an equipment protection level (EPL) Ga and is marked accordingly. The Gasman Flammable Gas Detector is only intended for use in one atmosphere depending on the sensors fitted and the end-user requirements.

Consequently, the equipment is marked with one, not both, of the following marking strings:

Ⓔx II 2 G Ex db ia IIC T4 Gb (-20 °C ≤ T_a ≤ +55 °C)
Ⓔx II 1 G Ex ia IIC T4 Ga (-20 °C ≤ T_a ≤ +65 °C)

The sensors are not replaceable by the end user and replacement may only be performed at suitable Crowcon service centres.

The apparatus is not designed for use in oxygen enriched atmospheres.

Charging conditions:

The apparatus must only be recharged or connected to serial communications when in a non-hazardous area, using the following chargers: -

Crowcon desktop charger / interface part number C01940

Crowcon desktop charger part number C01941

Crowcon desktop charger / Bluetooth Interface part number C011023

Alternatively, any Crowcon charger with an output (U_m) of 9V may be used to charge the apparatus, although when both charging and data communications are required, only charger / interface part number's C01940 & C011023 must be used.

16 Report Number

GB/BAS/ExTR21.0187/00

17 Specific Conditions of Use

None

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
ECAD-000223-CD-CERT	1 of 1	1	05/08/2021	MPS i-module
ECAD-000223-PCB-CERT	1 to 6	1	05/08/2021	MPS i-module
ECAD-000223-PL-CERT	1 of 1	3	22/09/2021	MPS i-module
MCAD-004053	1 of 1	B	2021-09-08	Gasman Flammable MPS Cert Label
P-5455-A4	1 of 1	09	2021-09-03	Flammable Gasman Serial / Model No. Label

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
P-5460	1 of 1	06	2020-07-14	Gasman Charger/Interface Assembly
P-5495-A4	1 of 1	6	07/20	Gasman Charger Label
ECAD-000212-CD-CERT	1 of 1	1	30/06/2020	T3 & Gasman Bluetooth Dock Board (Circuit Diagram)
ECAD-000212-PCB-CERT	1 to 6	1	03/07/2020	T3 & Gasman Bluetooth Charger Board (PCB & Track Layout)
ECAD-000212-PL-CERT	1 of 1	1	30/06/2020	T3 & Gasman Bluetooth Dock Board (Safety Critical Parts List)
MCAD-000344	1 of 1	03	16/11/2011	Gasman Battery
MCAD-003518	1 of 1	01	24/04/2018	Front Case Assembly
MCAD-003519	1 of 1	05	2021-07-19	Rear Case Assembly
5430-CERT	1 of 1	7	10/09	Gasman Instrument G A - Rechargeable
5423-CD-CERT	1 of 1	6	27/10/09	Gasman Rechargeable – Main PCB (Circuit Diagram)
P-5424-A2	1 of 1	2	08/05	Main Board Rechargeable PCB & Track Details
5425-PL	1 & 2	4	27/10/09	Gasman Rechargeable Main Board Certification Parts List
P-5456-A4	1 of 1	7	2021-04-20	Toxic / Oxygen Gasman Serial / Model No Label
P-5517 Issue 3	1 of 1	3	01/06	Hybrid 1A (Circuit Diagram)
P-5406-A3	1 of 1	4	07/06	Gasman Type 1A Hybrid Mech and Tracking Details
5407-CERT	1 of 1	7	10/07	Crowcon Type 1A ("Rechargeable") Hybrid Certification Parts List

Number	Sheet	Issue	Date	Description
P-5516 Issue 4	1 of 1	4	08/09	Hybrid 1B (Circuit Diagram)
5411-CERT	1 of 1	6	10/07	Crowcon Type 1B ("Encapsulated Fuse") Hybrid Certification Parts List
P-5410-A3	1 of 1	3	07/06	Gasman Type 1B Hybrid Mech and Tracking Details
5567-CD-CERT	1 of 1	1	29/10/09	Hybrid 3 (Circuit Diagram)
5567-PCB-CERT	1 of 1	1	29/10/09	Hybrid 3 PCB Drawing
5567-PL-CERT	1 of 1	1	28/10/09	Crowcon Type 3 Hybrid Certification Parts List
5553-CERT	1 of 1	1	05/08	Gasman Certification Instrument Names
P-5472-A2	1 of 1	3	08/09	Gasman Instrument G A – Non Rechargeable
P5401 Issue 6	1 of 1	6	10/8/06	Gasman (Budgie) non-rechargeable (Schematic)
P-5402-4A	1 of 1	4	05/06	Gasman (2005) Non-rechargeable Main PCB Details
P-5403-A4	1 of 1	5	Sept 2006	Gasman Non Rechargeable Main Board Certification Parts List
P-5499-A4	1 of 1	2	06/05	Gasman Conformal Coating of Non-rechargeable Main PCB
P5506 issue 2	1 of 1	2	13/9/06	Gasman Type 2 Hybrid (Circuit Diagram)
P-5414-A3	1 of 1	4	01/07	Gasman Type 2 Non-rechargeable Hybrid Mech and Tracking Details
5415-CERT	1 of 1	5	10/07	Crowcon Type 2 ("Non Rechargeable") Hybrid Certification Parts List
5490-CD-CERT	1 of 1	4	16-11-2012	i-module oxygen
P-5476-A3	1 of 1	2	06/05	Oxygen i-Module PCB & Track Details (used only for general physical size of module)
5494-PL-CERT	1 & 2	7	18/09/17	Oxygen I-Module Certification Parts List
P-5488 Issue 3	1 of 1	3	13/9/06	Tetra / Gasman Toxic iModule (Circuit Diagram)
P-5477-A3	1 of 1	2	06/05	Toxic i-Module PCB & Track Details (used only for general physical size of module)
5493-PL-CERT	1 & 2	9	12/09/17	Toxic I-Module Certification Parts List
P-5518 issue 3	1 of 1	3	22/09/06	Tetra/Gasman COSH iModule (Circuit Diagram)
P-5526-A3	1 of 1	1	10/05	COSH i-Module PCB & Track Details (used only for general physical size of module)
P-5520 Issue 1	1 of 1	1	6/9/05	Alphasense COSH iModule Adapter
P-5527-A3	1 of 1	1	10/05	Alphasense D2 COSH i-Module Adapter PCB & Track Details
5844-PL-CERT	1 & 2	4	12/09/17	Dual Toxic i-Module Certification Parts List
P-5427 issue 5 Charger	1 of 1	5	12/3/07	Gasman Charger (Circuit Diagram)
P-5428	1 to 6	4	11/1/07	Gasman (Budgie) Charger PCB
P5437 issue 1 Interface	1 of 2	1	20/12/04	Gasman Interface PCB (Circuit Diagram)
P-5438-A3	1 of 1	1	02/05	Gasman Interface PCB and Track Details
P-5429-A4	1 of 1	3,4,5	12.3.2007	Gasman External Charger Certification Parts List
P-5439-A4	1 of 1	1	3.3.2005	Gasman External Interface Certification Parts List
ECAD-000222-ASM	1 to 2	1	21/06/2021	Mini i-module Lead-free oxygen
ECAD-000222-CD-CERT	1 of 1	1	22/02/2021	Mini i-module Lead-free oxygen
ECAD-000222-PCB-CERT	1 to 8	1	21/06/2021	Mini i-module Lead-free oxygen

Number	Sheet	Issue	Date	Description
ECAD-000222-PL-CERT	1 of 1	1	21/06/2021	Mini i-module Lead-free oxygen

The above drawings are associated and held with IECEx Certificate IECEx BAS 05.0038.

20 Certificate History

Certificate No.	Date	Comments
Baseefa04ATEX0383	10 May 2005	The release of the prime certificate. The associated test and assessment against the requirements of EN 50014: 1997 + Amd. 1 & 2, EN 50018: 2000 + Amd. 1 & EN 50020: 2002 is documented in Test Report No. 04(C)0202.
Baseefa04ATEX0383/1	22 June 2005	To permit the use of an alternative rechargeable battery, minor changes to the oxygen and toxic i-modules and other minor drawing changes not affecting the original assessment as documented in Test Report No. 05(C)0256.
Baseefa04ATEX0383/2	28 February 2006	To permit the optional use of an alternative sensor module known as dual toxic and other minor drawing changes not affect the original assessment as documented in Test Report No. 05(C)0256/1.
Baseefa04ATEX0383/3	11 April 2006	To permit a change of encapsulant in the hybrid circuits.
Baseefa04ATEX0383/4	12 July 2006	To permit the use of alternative model names Gas-Mate, Oxy-Mate CR and Toxi-Mate CR and minor additions to the Oxygen and Toxic i-Module Certification Parts Lists.
Baseefa04ATEX0383/5	15 September 2006	To permit minor drawing changes, the use of alternative sounders, and the use of alternative CO2 chemical i-module as documented in Test Report No. 06(C)0673.
Baseefa04ATEX0383/6	8 December 2006	To permit minor changes to the desktop charger units with part number C01940 and C01941. Also to permit the replacement of desktop charger C01941 with any Crowcon charger with an output (U_m) of 9V. When both charging and data communication are required, only charger / interface part number C01940 must be used as documented in Test Report No. 06(C)1022.
Baseefa04ATEX0383/7	4 July 2007	To permit minor changes to drawings and minor modification to circuits.
Baseefa04ATEX0383/8	4 April 2008	To permit the use of an alternative cell type ICP653450U. When this cell is used, the marking becomes: ⟨Ex⟩ II 2G Ex ia d IIC 170°C (T3) (-20°C ≤ T_a ≤ +65°C) Testing documented in Test Report No. 08(C)0211
Baseefa04ATEX0383/9	12 June 2008	To permit use of an alternative encapsulant in the hybrid circuits and to permit the introduction of a new drawing listing the possible model names.
Baseefa04ATEX0383/10	6 August 2008	To permit the use of an alternative rechargeable cell Sanyo Type UF553450Z. When this cell is used the marking is: ⟨Ex⟩ II 2G Ex ia d IIC T4 (-20°C ≤ T_a ≤ +65°C) Also to permit minor drawing changes not affect the original assessment. Testing documented in Test Report No. GB/BAS/ExTR08.0128/00

Certificate No.	Date	Comments
Baseefa04ATEX0383 Issue 11	16 December 2009	This issue of the certificate incorporates previously issued primary & supplementary certificates into one certificate and confirms the current design meets the requirements of EN 60079-0: 2006 & EN 60079-11: 2007 including the revision of the equipment marking in accordance with these standards. The certificate also permits: - 1) The removal of the alternative rechargeable cell type ICP653450U and therefore the T3 variant of the equipment is now obsolete. 2) The alternative fitting of the Hybrid 3 sub-assembly in place of the Hybrid 1A sub-assembly not affecting the original assessment. Certification Drawing No's 5392, P5423 issue 4, P-5425-A4, 5551-CERT, P-5867-CERT Issue 1 and P-5879-CERT Issue 1 were made obsolete.
Baseefa04ATEX0383 Issue 12	2 December 2011	This issue of the certificate confirms the current design meets the requirements of EN 60079-0:2009 and adds an updated rechargeable battery drawing. The marking code remains unchanged.
Baseefa04ATEX0383 Issue 13	01 September 2014	Confirms the current design meets the requirements of EN 60079-0:2012 and EN 60079-11:2012 and records minor changes to some drawings. The assessment is recorded in GB/BAS/ExTR14.0249/00.
Baseefa04ATEX0383 Issue 14	04 November 2014	Records a minor change to the Gasman Charger / Interface terminal pins not affecting the original assessment and permits the addition of an alternative Gas Sensor SGX Sensortech (S.A.) Micro-Pellistor MP-7217, MP-7218 andVQ548MP, covered by certificate DEMKO 14 ATEX 1266U. Assessment documented in Test Report No. GB/BAS/ExTR14.0324/00.
Baseefa04ATEX0383 Issue 15	21 May 2018	To permit: - i) Minor component changes to the i-Modules fitted in the equipment not affecting the original assessment. ii) Minor changes to the case materials. iii) To permit minor drawing changes not affecting the original assessment. iv) To confirm the current designs of the Gasman Flammable Gas Detector have been reviewed against the requirements of EN 60079-0: 2012 + A11: 2013 & EN 60079-1: 2014 in respect of the differences from EN 60079-0: 2012 & EN 60079-1: 2007, and with exception of the marking, none of the differences affect the equipment. In accordance with the marking requirements of EN 60079-1: 2014, the equipment is now marked as follows: - ⟨Ex⟩ II 2G Ex db ia IIC T4 Gb (-20°C ≤ T_a ≤ +65°C) The assessment is documented in IECEx ExTR No. GB/BAS/ExTR18.0048/00 (held with IECEx BAS 05.0038 Iss. 15), Project File 16/0383.

Certificate No.	Date	Comments
Baseefa04ATEX0383 Issue 16	10 August 2020	This issue of the certificate permits the use of an alternative charger & Bluetooth Interface with the equipment. The Certificate Schedule on page 2 of the certificate was revised to list details of the new accessory. The test and assessment is detailed in Certification Report No. GB/BAS/ExTR20.0114/00 (held with IECEx BAS 05.0038 Iss. 16), Project File 19/0718.
Baseefa04ATEX0383 Issue 17	1 November 2021	This issue of the certificate confirms the current design meets the requirements of EN IEC 60079-0:2018. Additionally, the construction of the equipment has been revised to incorporate a new i-Module unit and an alternative sensor option that permits the equipment to be used in an atmosphere with an equipment protection level (EPL) Ga as an alternative model. The alternative model introduces an additional marking string to the certification. The test and assessment is detailed in Report No. GB/BAS/ExTR21.0187/00. Project File 20/0639.
For drawings applicable to each issue, see original of that issue.		