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: **Baseefa05ATEX0277X – Issue 4**

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: **TVOC and TVOC 2**

5 Manufacturer: **Ion Science Ltd**

6 Address: **The Hive, Butts Lane, Fowlmere, Royston, SG8 7SL, United Kingdom**

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa05ATEX0277 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. **GB/BAS/ExTR19.0008/00**

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

EN IEC 60079-0:2018 **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:

Ⓔx II 2G Ex ia IIC T4 Gb -20°C ≤ Ta ≤ +50°C

SGS Fimko Oy Customer Reference No. **2242** Project File No. **18/0798**

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Authorised Signatory for SGS Fimko Oy

13 # Schedule

14 ## Certificate Number Baseefa05ATEX0277X – Issue 4

15 Description of Product

TVOC and TVOC 2 are wall mounted total volatile organic compound monitors designed to monitor the surrounding atmosphere for the presence of volatile organic compounds and provide both a local display of the concentration, and a corresponding 4-20mA signal for remote use.

They comprises electronic circuits and connectors on a PCB contained within an enclosure providing a degree of protection of at least IP20, together with a sensor mounted in a housing which protrudes from the bottom of the main enclosure.

The sensor used in the TVOC may be marked with any of the following Certificate numbers: KEMA06ATEX0157U, IECEx CSA 06.0006X, KEMA06ATEX0039U or IECEx CSA 06.0005X.

The TVOC 2 is intended for use with MiniPID Sensor, marked Baseefa07ATEX0060U and IECEx BAS 07.0030U.

Input Parameters:

For Connector J1 (Power Supply):

$U_i = 18V$, $I_i = 800mA$, $P_i = 1.2W$, $L_i = 0$ and $C_i = 0$

For Connector J2 (4-20mA Output):

$U_i = 30V$, $I_i = 200mA$, $P_i = 1.2W$, $L_i = 0$ and $C_i = 0$.

16 Report Number

GB/BAS/ExTR19.0008/00

17 Specific Conditions of Use

1. Electrostatic discharge hazard. Refer to equipment instructions for guidance to minimise the risk of electrostatic discharge.

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
1.4.1	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
ATEX0052	1 of 1	08	14/05/2019	TVOC GA - ATEX
CERT0182	1 – 2	1a	14/05/2019	TVOC II GA
CERT0183	1 of 1	3	09.04.19	TVOC II Sensor Board Circuit Diagram
CERT0184	1 – 5	2	11/04/2019	TVOCII (MiniPID) SENSOR PCB
CERT0185	1 - 2	3	17.01.19	TVOC II Main PCB Circuit Diagram
CERT0186	1 – 5	1	18/01/2019	TVOC II Main PCB

Number	Sheet	Issue	Date	Description
CERT0187	1 of 1	3	16/01/2019	TVOC II Schedule of Safety Critical Components

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
ATEX0053	1	7	5.09.06	TVOC PCB Layout Top Silk
ATEX0053	2	7	5.09.06	TVOC PCB Layout Top Copper
ATEX0053	3	7	5.09.06	TVOC PCB Layout Bottom Copper
ATEX0053	4	7	5.09.06	TVOC PCB Layout Bottom Silk
ATEX0054	1 & 2	7	13.11.08	TVOC Main Circuit Diagram
ATEX0055	1 of 4	2	06.07.06	TVOC Sensor PCB Top Component Positions
ATEX0055	2 of 4	2	06.07.06	TVOC Sensor PCB Top Copper
ATEX0055	3 of 4	2	06.07.06	TVOC Sensor PCB Bottom Copper
ATEX0055	4 of 4	2	06.07.06	TVOC Sensor PCB Bottom Component Positions
ATEX0056	1 of 1	2	06.07.06	TVOC Circuit Diagram (Sensor PCB)
ATEX0057		9	12.11.08	TVOC Schedule of Safety Critical Components

The above drawings are common to and held with Certificate IECEx BAS 06.0057X.

20 Certificate History

Certificate No.	Date	Comments
Baseefa05ATEX0277	27 July 2006	The release of the prime certificate. The associated test and assessment against the requirements of EN 50014:1997+Amd 1&2 and EN 50020:2002 is documented in Test Report No. 05(C)0423.
Baseefa05ATEX0277/1	8 September 2006	To permit changes to the main PCB, and various changes to other drawings. These changes do not affect the ATEX marking of the instrument. Test report 06(C)0614.
Baseefa05ATEX0277/2	24 November 2008	To permit minor changes to the 4-20mA circuit and To confirm that the TVOC has been reviewed against the requirements of EN60079-0:2006 and EN60079-11:2007 in respect of the differences from EN50014:1997 + Amendments 1 & 2 and EN50020:2002 and that, with the exception of the marking code, none of these differences affect this equipment. Test report 08(C)0578.
Baseefa05ATEX0277/3	31 May 2016	To update certification to EN 60079-0:2012+A11:2013 and EN 60079-11:2012 and associated minor labelling changes. Test report GB/BAS/ExTR16.0136/00 for project 16/0253.
Baseefa05ATEX0277X Issue 4	13 June 2019	This issue of the certificate incorporates previously issued primary & supplementary certificates into one certificate and confirms the current design meets the requirements of EN IEC 60079-0:2018, Introduces the TVOC 2 model and adds a condition of use. Test report GB/BAS/ExTR19.0008/00 for Project 18/0798.
For drawings applicable to each issue, see original of that issue.		