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: **Baseefa09ATEX0220X – Issue 7**

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: **IR Gas Detector with Display**

5 Manufacturer: **Crowcon Detection Instruments Limited**

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

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa09ATEX0220X 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 EN 60079-31: 2014

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 Schedule

SGS Fimko Oy Customer Reference No. **0249** Project File No. **20/0655**

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13 # Schedule

14 ## Certificate Number Baseefa09ATEX0220X – Issue 7

15 Description of Product

The IR Gas Detector with Display comprises a stainless steel housing with a transparent sapphire detector window fitted to the end and clamped in place. A protective weatherproof cover manufactured in an antistatic plastic material is fitted over the sapphire window. The housing contains optics and a stacked PCB assembly. At the opposite end to the window is an IS Interface assembly. The IS Interface, on two encapsulated PCB's, provides an intrinsically safe output to power the display which contains one more PCB. The display may be directly mounted on the gas detector or remotely mounted using up to 30 metres of cable which is fitted with connectors at each end. The connection arrangement and the enclosures protect the intrinsically safe circuits to at least IP20. The interface assembly is secured against unintentional removal from the main gas detector by a securing plate fixed in position by cap screws with an internal hexagon head.

The internal circuits of the IR Gas Detector are rated up to a maximum of 32V and 5W, of which less than 0.7W is present at the display.

A Handheld Display is also available and is designed for connection to the IR Gas Detector only while the equipment is being calibrated. Once calibration is complete the Handheld Display is removed. The display is fitted with a 1.5 metre cable with a L/R ratio not exceeding 23µH/Ω.

In cases where the IR Gas Detector is installed in a location where it is difficult to connect the handheld display to it, a Remote Calibration Box can be connected to the detector. The Remote Calibration Box comprises a black polyester enclosure fitted with two inter-connected polarised connectors permitting connection to the Gas Detector via a cable of up to 28.5 metres and a L/R ratio not exceeding 23µH/Ω and the Handheld Display.

All variants of the IR Gas Detector with Display are suitable for installation in an explosive gas atmosphere, but the Remote and Handheld Display variants of the equipment can be additionally installed in an explosive dust atmosphere with the Gas Detector and I.S interface, and where applicable the Remote Calibration Box, mounted in the hazardous area and the remote or Handheld Display mounted in the non-hazardous area. Based on this, the following variants of the IR Gas Detector with Display are marked as follows: -

IR Gas Detector with Fixed Display	⟨Ex⟩ II 2G	Ex db ia IIC T4 Gb (-40°C ≤ T_a ≤ +75°C)
IR Gas Detector with Remote or Handheld Display	⟨Ex⟩ II 2GD	Ex db ia IIC T4 Gb (-40°C ≤ T_a ≤ +75°C) Ex tb ia IIIC T135°C Db (-40°C ≤ T_a ≤ +40°C)

For the Ex db / Ex tb part (Main Gas Detector)

Two cable entry holes are provided as specified on the certified drawings for the accommodation of a flameproof cable entry device, with or without the interposition of a flameproof thread adapter. One cable entry is of thread form M20, and the other is of thread form ½" NPT. The cable entry thread form for each cable entry is identified on the body of the IR Gas Detector by etched markings.

The cable entry device and thread adapter shall be suitable for the equipment, the cable and the conditions of use and shall be certified as Equipment (not a component) under an EU Type Examination Certificate to Directive 2014/34/EU.

Any unused cable entry holes must be fitted with a suitable flameproof stopping plug certified as Equipment (not a component) under an EU Type Examination Certificate to Directive 2014/34/EU.

When the Remote and Handheld variants are mounted in an explosive dust atmosphere, cable entry device and thread adapter shall be suitable for the equipment, the cable and the conditions of use and shall be certified as Equipment (not a component) under an EU Type Examination Certificate to Directive 2014/34/EU with a minimum ingress protection of at least IP6x.

For the Ex i part (IS Interface & Display)

The L/R ratio of the interconnecting cable for the Remote & Handheld Display must not exceed 23µH/Ω.

Two contacts on the front of the display are intended for connection to a HART communicator, Emerson Type 375 Communicator to Certificate BVS 03 ATEX E 347 & IECEx BVS 08.0044 or equivalent. The output parameters for these contacts are U_o = 5.9V, I_o = 19mA, P_o = 28mW, C_i = 0 and L_i = 0.

The contacts on the front of the display are not protected to IP20, however the possible output has a FOS of at least 250 so does not pose a hazard.

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The equipment must be earthed using the cable gland and steel armoured cable.
2. IR Gas Detectors with Remote & Handheld Displays Only: When located in an explosive dust atmosphere, the display must only be mounted in the non-hazardous area.

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
6730	1 of 1	05	13/09/2019	IREX / IRmax With Display Certification Label
6743-CERT	1 of 1	14	25/04/2012	IREX / IRmax Configurations
MCAD-000351	1 of 1	05	18/09/2019	Cert Label – IRmax Remote Display

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
6029*[1]	1 of 1	03	08/11/2017	Barrier Outer Adapter
6034-CERT	1 of 1	06	17/02/2014	IREX / IRmax I.S. Transformer Certification Drawing
6651-CERT*[1]	1 of 1	20	10/04/2018	IREX / IRmax IIC General Assembly
6705-CERT*[1]	1 of 1	09	31/08/2018	IREX / IRmax IS Interface
6730	1 of 1	04	02/12/2016	IREX / IRmax With Display Certification Label
6743-CERT	1 of 1	04	25/04/2012	IREX / IRmax Configurations
MCAD-000351	1 of 1	04	21/03/2017	Cert Label – IRmax Remote Display
6693-CERT	1 of 1	7	07/09/2010	IREX / IRmax Fixed Display Certification GA
6729-CERT	1 of 1	8	08/09/2010	IREX / IRmax Remote Display Configuration
6713-CD-CERT	1 of 1	8	9/12/09	IRMAX Display Barrier Encapsulated Ex ia Circuit Diagram
6713-PL-CERT	1 of 1	8	9/12/09	IRMAX Display Barrier Encapsulated Ex ia Certified Parts List
6713-PCB-CERT	1 to 6	8	10/12/09	IRMAX Display Barrier Encapsulated Ex ia PCB Details
6663-CD-CERT	1 of 1	9	09.12.09	IRMAX Display Barrier Ex ia, Circuit Diagram

Number	Sheet	Issue	Date	Description
6663-PL-CERT	1 of 1	9	09.12.09	IRMAX Display Barrier Ex ia, Certified Parts List
6663-PCB-CERT	1 to 6	9	11/12/09	IRMAX Display Barrier Ex ia PCB Details
6610-CD-CERT	1 of 1	3	13.7.09	IREX Display Circuit Diagram
6610-PL-CERT	1 of 1	3	13.7.09	IREX Display Certified Parts List
6610-PCB-CERT	1 to 6	3	26.08.09	IREX Display PCB Details
6034-CERT	1 of 1	4	07/09/2010	IREX / IRmax I.S. Transformer
6044-CERT	1 of 1	1	09/09/2010	IREX / IRmax Hand Held Remote Configuration
6052-CERT	1 of 1	03	28/02/2012	IREX / IRmax Calibration Configuration
MCAD-000355	1 of 1	02	28/02/2012	IREX / IRmax Calibration Box Assembly – Black GRP

The drawings marked *[1] are associated and held with IECEx Certificate No. IECEx BAS 09.0104, but also associated with IECEx Certificate No. IECEx BAS 09.0109X and ATEX Certificate No. Baseefa09ATEX0206X.

The remaining drawings are associated and held with IECEx Certificate No. IECEx BAS 09.0104.

20 Certificate History

Certificate No.	Date	Comments
Baseefa09ATEX0220X	26 April 2010	The release of the prime certificate. The associated test and assessment is documented in Test Report No's. GB/BAS/ExTR09.0146/00 & GB/BAS/ExTR09.0155/00.
Baseefa09ATEX0220X/1	27 October 2010	To permit: - i) the option of fitting a Handheld Display to the variants of the IR Gas Detector fitted with the IS Barrier Module. The fitting of the Handheld Display does not affect the original assessment of the IR Gas Detector and it's IS interface. ii) the option of fitting a Remote Calibration Box to variants of the IR Gas Detector fitted with the IS Barrier Module where it is difficult to connect the Handheld Display to the equipment for calibration due to its position of installation. The fitting of the Remote Calibration Box does not affect the original assessment of the IR Gas Detector and it's IS interface. iii) minor drawing changes not affecting the original assessment. The above test and assessment is documented in Certification Report No.'s GB/BAS/ExTR10.0231/00 & GB/BAS/ExTR10.0243/00.
Baseefa09ATEX0220X/2	26 September 2011	To permit a minor mechanical change to the I.S. interface not affecting the original assessment. The above test and assessment is documented in Certification Report No. GB/BAS/ExTR11.0210/00.
Baseefa09ATEX0220X/3	5 January 2012	To permit the change of material of the Remote Calibration Box fitted on some variants of the equipment to a black polyester enclosure. This change does not affect the original assessment. The above test and assessment is documented in Certification Report No. GB/BAS/ExTR11.0309/00.

Certificate No.	Date	Comments
Baseefa09ATEX0220X/4	2 May 2012	To permit: - i) an alternative optional cement to be used on the equipment not affecting the original assessment. ii) minor drawing changes not affecting the original assessment. The above test and assessment is documented in Certification Report No. GB/BAS/ExTR12.0063/00.
Baseefa09ATEX0220X/5	24 April 2013	To permit a minor marking change on the Main Gas Detector Housing not affecting the original assessment. The above change is documented in Certification Report No. GB/BAS/ExTR13.0064/00.
Baseefa09ATEX0220X Issue 6	3 October 2018	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: 2012 + A11: 2013, EN 60079-1: 2014 and EN 60079-11: 2012 including the revision of the marking in accordance with these standards. This issue also permits: - i) The additional assessment of the remote display variants of the IR Gas Detector fitted with the IS Barrier against the dust requirements of EN 60079-0: 2012 + A11: 2013, EN 60079-11: 2012 and EN 60079-31: 2014 permitting the mounting of this assembly in the explosive dust atmosphere with the remote display only mounted in the non-hazardous area. This variants of equipment is additionally marked with the following dust Certification Code: - ⟨Ex⟩ II 2GD Ex tb ia IIIC T135°C Db (-40°C ≤ T_a ≤ +40°C) The certificate schedule was revised to detail the dust certification and a Specific Condition of Use was added to the certificate specifying the display must only be mounted in the non-hazardous area. ii) Minor drawing changes not affecting the original assessment. The above test and assessment is documented in Certification Report No. GB/BAS/ExTR17.0131/00, Project Ref No. 15/0089.
Baseefa09ATEX0220X Issue 7	13 April 2023	To confirm that the current design meets the requirements of EN IEC 60079-0:2018. To permit minor changes to the drawings that do not affect the safety of the equipment. Test Report No. GB/BAS/ExTR22.0164/00. Project File No. 20/0655
For drawings applicable to each issue, see original of that issue.		