



1 **TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 12ATEX4359X** Issue: **0**

4 Equipment: **MM60003/HS and MM60004/U UV Self Check Sensors**

5 Applicant: **Autoflame Engineering Ltd**

6 Address: **Unit 1-2 Concorde Business Centre
Airport Industrial Estate
Wireless Road
Biggin Hill
TN16 3YN
United Kingdom**

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 60079-0:2012

EN 60079-15:2010

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:



II 3 G

Ex nAc IIC Gc T4

C Ellaby
Deputy Certification Manager

Project Number 26089

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The MM60003/HS and MM60004/U are used to detect the presence of a flame when used as part of a Burner Management System. The presence of the flame is detected by measuring the amount of radiated Ultra Violet light present at typical distances up to 1.8 m, dependent on the flame size, shape and intensity.

The MM60004/U and MM60003/HS differ in construction and functionality as follows:

The MM60004/U consists of an aluminium enclosure with a quartz glass viewing window and lid. The body measures 74 mm x 57 mm diameter and the lens assembly is housed within a 25.3 mm diameter tube. The enclosure contains a single printed circuit board (PCB) that has mounted on it, a single UV Bulb for flame detection, status indicator LEDs and screw type connectors for the field wiring that enters the enclosure by a suitable certified cable gland. The removable lid has an environmental gasket to facilitate the connection of the field wiring. The assembled enclosure has an environmental rating of IP 54.

The MM60003/HS consists of an aluminium enclosure with quartz glass viewing window and lid with a quartz viewing window. The body measures 70 mm x 93 mm diameter and the lens assembly is housed within a 22 mm x 35 mm diameter tube. It also contains a stepper motor connected to a paddle that is used to shroud the quartz glass window when required. The enclosure contains a single printed circuit board (PCB) that has mounted on it, a single UV Bulb for flame detection, stepper motor circuit, status indicator LEDs and screw type connectors for the field wiring that enters the enclosure by a suitable certified cable gland. The removable lid has an environmental gasket to facilitate the connection of the field wiring. The assembled enclosure has an environmental rating of IP 54.

Rating

MM60004/U (4239): Bulb - 300 V, 0.15 mA, 60 mW
MM60003/HS (4214): Bulb - 300 V, 0.15 mA, 60 mW
Motor - 15V, 180 mA, 2.7 W

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	8 April 2013	R26089A/00	The release of the prime certificate.

15 SPECIAL CONDITIONS FOR SAFE USE

- 15.1 Do not open, maintain or service in an area where an explosive atmosphere may be present.
- 15.2 The envisaged application indicates that external heat sources are likely to occur. It is the responsibility of the installer to locate the equipment where its ambient range will not be exceeded.
- 15.3 All field wiring shall have a minimum of 0.3 mm of solid insulation.

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16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of Type Examination Certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The electrical circuits within the equipment are not intended to be connected to earth or the frame in service. In accordance with EN 60079-15: 2010 clause 6.5, each manufactured sample of the equipment shall be subjected to an electric strength test using the following test voltages for 60 s +5/-0 s:

MM60004/U:

1,600 Vrms +5/-0 % applied between the input 50 and 51 and metal enclosure.

MM60003/HS:

500 Vrms +5/-0 % applied between the inputs 20 and 21 and the metal enclosure.

1,600 V +5/-0 % applied between the inputs 20 and 21, and, inputs 50 and 51.

1,600 V +5/-0 % applied between the inputs 50 and 51 and the metal enclosure.

There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.

Certificate Annexe

Certificate Number: Sira 12ATEX4359X
Equipment: MM60003/HS and MM60004/U UV Self
Check Sensors
Applicant: Autoflame Engineering Ltd



Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
4214	1 of 1	4	09 Jan 13	Mark 6 MM Shutter PCB CCT Diagram
4239	1 of 1	1	09 Jan 13	Standard UV R2868 Holder PCB for 4239
3831EX	1 of 1	6	09 Jan 13	ATEX High Sensitivity End View MM60003/HS/EXP Assembly Drawing
4200EX	1 of 1	2	09 Jan 13	ATEX End View MM60006/U/EXP Assembly Drawing
MM60003_HS_EXP_PCBBOM	1 of 4	1	09 Jan 13	MM60003/HS/EXP PCB Parts Lists
MM60004_U_EXP_PCBBOM	1 of 4	1	09 Jan 13	MM60004/U/EXP PCB Parts Lists
3818	1 of 1	-	09 Jan 13	MK6 UV sight Glass (Quartz Glass for MM60003 MM6004)
4309	1 of 1	3	09 Jan 13	Gasket for Self Check UV (Neoprene Gasket for MM60003)
4812	1 of 1	1	09 Jan 13	Gasket for Standard UV (Neoprene Gasket for MM60004)
4239	1 of 1	3	09 Jan 13	PCB Layout of MM60004U
SIRA01	1 of 1	4	15 Feb 13	PCB Layout of MM60003HS
SIRA02	1 of 1	4	28 Mar 13	MM60003 Label
SIRA03	1 of 1	5	28 Mar 13	MM60004 Label
SIRA04-	1 of 1	-	18 Feb 13	4239_2 Layout TOP
SIRA05-	1 of 1	-	18 Feb 13	4239_2 Layout BOTTOM
SIRA06-	1 of 1	-	18 Feb 13	4214_4 Layout TOP
SIRA07-	1 of 1	-	18 Feb 13	4214_4 Layout BOTTOM

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