

1 EC-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

3 **EC-Type Examination Certificate No:** FM09ATEX0076X

4 **Equipment or protective system:** FS18X, FS19X, FS20X, FS24X, FS24X-9, SS2 and SS4
(Type Reference and Name) Flame Detectors

5 **Name of Applicant:** Fire Sentry Corporation

6 **Address of Applicant:** 23311 La Palma Ave
Yorba Linda CA 92887
USA

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3032668EC dated 21st May 2010

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012, EN 60079-1: 2007, EN 60079-31: 2009

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 EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 2 G Ex db IIC T*

II 2 D Ex tb IIIC T135°C
See Description

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 16th April 2013

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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SCHEDULE



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to EC-Type Examination Certificate No. FM09ATEX0076X

13 Description of Equipment or Protective System:

The Model FS24X and FS24X-9 Flame Detectors sense the WideBand IR radiant energy of blackbody particulate and molecular emissions generated by both hydrocarbon and nonhydrocarbon flames. The WideBand IR spectral radiant energy wavelengths sensed by the Quad (4) sensors span from approximately 0.4 to 7.0 microns for the FS24X and FS24X-9. The FS24X has a 110° field of view whereas the FS24X-9 has a 90° field of view.

The Model FS18X Flame Detectors sense the WideBand IR radiant energy of blackbody particulate and molecular emissions generated by both hydrocarbon and nonhydrocarbon flames and fires. The WideBand IR spectral radiant energy wavelengths sensed by the Tri (3) sensors span from approximately 0.4 to 3.5 microns for the FS18X. The FS18X has a 110° field of view.

The Model FS19X and FS20X Flame Detectors sense the Ultraviolet and WideBand IR™ radiant energy of blackbody particulate and molecular emissions generated by both hydrocarbon and nonhydrocarbon flames and fires. The WideBand spectral radiant energy wavelengths sensed by the Tri (3) sensors span approximately 0.18 to 3.5 microns for the FS19X/FS20X Detector. The FS19X and FS20X have a 90° field of view.

The Model SS2 Multi-Spectrum Optical Flame Detector is a microprocessor-based device, which sees Ultraviolet (UV), visible (VIS), and infrared (IR) spectral regions. The SS2 has a shorter range and faster response capability than the SS4.

The Model SS4 Optical Flame Detector is a digital, configurable, computerized, "smart" unit. This Detector has sensitivity to Type A, B, and C flaming fires. Detectors of this design process Ultraviolet (UV), Wide band Infrared (IR), and Visible (VIS) spectral ranges from ruggedized Solar-blind UV, "Quantum-Effect" IR, and visible sensors correspondingly.

The SS4 has a longer range and slower response capability than the SS2 and also has less false alarm vulnerabilities and extra self testing capabilities.

The FSX Flame Detectors have maximum electrical parameters of 32 VDC, 150mA. The SS Flame Detectors have maximum electrical parameters of 32 VDC, 75mA. The enclosures are available with (2) ¾ NPT and/or M25 conduit entries for customer connections.

The Temperature Class and ambient temperature range for the various models are as follows:

FS18X:	T4 Ta=-20°C to +110°C,	T5 Ta= -20°C to +75°C,	T6 Ta=-20°C to +60°C
FS18X-P:	T4 Ta=-20°C to +110°C,	T5 Ta= -20°C to +75°C,	T6 Ta=-20°C to +60°C
FS19X:	T4 Ta=-40°C to +110°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
FS20X:	T4 Ta=-40°C to +110°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
FS24X:	T4 Ta=-40°C to +110°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
FS24X-9:	T4 Ta=-60°C to +110°C,	T5 Ta= -60°C to +75°C,	T6 Ta=-60°C to +60°C
SS2-A:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS2-AH:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS2-AM:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS2-AN:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS4-A:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS4-A-2:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS4-AS:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS4-AS-2:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS4-AUV:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C
SS4-AUV-2:	T4 Ta=-40°C to +85°C,	T5 Ta= -40°C to +75°C,	T6 Ta=-40°C to +60°C

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14 **Specific Conditions of Use:**

1. WARNING: ELECTROSTATIC HAZARD DO NOT RUB WITH DRY CLOTH.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 **Test and Assessment Procedure and Conditions:**

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
27 th May 2010	Original Issue.
27 th January 2011	<u>Supplement 1:</u> Report Reference: – 3032668rev101027 dated 6 th January 2011. Description of the Change: Updated documentation and labels Identification Number (1725) of the Notified Body (FM Approvals) involved in production control.
8 th June 2011	<u>Supplement 2:</u> Report Reference: – 3032668ECrev110405 dated 27 th May 2011. Description of the Change: Updated documentation to include GOST (Russian Approval) marking on the product label.
16 th April 2013	<u>Supplement 3:</u> Report Reference: – 3046183 dated 15 th April 2013. Description of the Change: Updated to EN 60079-0: 2012 and EN 60079-31: 2009 editions. Addition of special condition.

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