

# 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: FM12ATEX0055X

4 Equipment or protective system: 4501-05 Hydrogen Sulfide Toxic Gas Sensor Module  
(Type Reference and Name)

5 Name of Applicant: Sierra Monitor Corporation

6 Address of Applicant: 1991 Tarob Court,  
Milipitas, CA 95035  
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:

3046005 dated 5 April 2013

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: 2009, EN 60079-1: 2007

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 d IIB+H<sub>2</sub> T6 Ta = -20°C to +50°C

**Mick Gower**  
Certification Manager, FM Approvals Ltd.

Issue date: 08<sup>th</sup> May 2013

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

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# SCHEDULE

to EC-Type Examination Certificate No. FM12ATEX0055X

**13 Description of Equipment or Protective System:**

The Model 4501-05 Hydrogen Sulfide Toxic Gas Sensor Module is a two-wire transmitter that utilizes the electrochemical cell to monitor for the specified gas over various gas specific ranges. It is a self-contained gas detection assembly which can function as a standalone gas detector using an integral sensor. The device operates on 24 Vdc nominal (10 – 30 vdc range) with a 4-20 mA output measurement signal. The ambient operating temperature of the device is -20°C to +50°C.

The Model 4501-05 Toxic Gas Sensor Module consists of a sensor assembly which is threaded into an explosionproof electronics housing. The housing is 8080SE, which contains an electrochemical hydrogen Sulfide gas sensing cell, sensor electronics and the sensor transmitter board. The aluminium or stainless steel enclosure assembly contains a male-threaded NPT nipple and a sintered flame arresting element press fit into place. The sensor assembly contains a threaded joint between the top and bottom portions and a cemented joint in the neck of the threaded male NPT connection. The sensor assembly is a two piece construction with a cylindrical portion and a cover. The sensor wiring passes through the cover connection thread opening and the sensor is separated from the electronics compartment by potting compound. The Aluminium or stainless steel electronics enclosure is manufactured by International Metal Engineering (IME). The enclosure Model 8080SE which is IECEx certified under Sira IECEx SIR 07.0111U and ATEX certified under Sira 07ATEX1331U for use in Gases Ex d IIC Ta = -40°C to +85°C, IP68.

**14 Specific Conditions of Use:**

Contact the original manufacturer for information on the dimensions of the flameproof joints.

**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
08 <sup>th</sup> May 2013	Original Issue.

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# Blueprint Report

**Sierra Monitor Corp (1000000652)**

**Class No ATEX**

**Original Project I.D. 3046005**

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
A14063	B1	Model 4501-05 2 Wire H2S	3046005	Yes (pdf)
A14065	B1	Model 4501-05-AL 2 Wire H2S (1)	3046005	Yes (pdf)
A21830	A	IT H2S Aluminum Sensor Assembly	3046005	Yes (pdf)
A27076	A	Assembly, Mechanical 2 Wire Housing-Disk	3046005	Yes (pdf)
A27077	A	Assembly Enclosure 2 Wire Module	3046005	Yes (pdf)
A27085	A	Assembly Enclosure AL 2 Wire Module	3046005	Yes (pdf)
A4501-05	A1	Model 4501-05 Assy. Sensor Module, 2-wire H2S	3046005	Yes (pdf)
B14063	B1	Model 4501-05 2 wire H2S SS Enclosure BOM	3046005	Yes (pdf)
B14065	B1	Module 4501-05 2 Wire H2S AL Enclosure	3046005	Yes (pdf)
B21830	A	Aluminum Sensor Assy BOM	3046005	Yes (pdf)
B27077	A	Assy 4501 Encls S1 2 Wire Module	3046005	Yes (pdf)
B27085	A1	Assy Enclosure AL 2 Wire Module, BOM	3046005	Yes (pdf)
B4501-51	1	Remote Sensor Mounting Assy 4501-xx	3046005	Yes (pdf)
F39190	1	Disk Sintered	3046005	Yes (pdf)
F39199	3B	2 Wire EC sensor Fab, Base Housing	3046005	Yes (pdf)
F39200	B	2 Wire EC Sensor Fab, Cover	3046005	Yes (pdf)
F39201	A	Fab Plate 2 wire EC Module	3046005	Yes (pdf)
H35413	A	Label Caution read Instr. Manual	3046005	Yes (pdf)
H35452-1	A3	Model 4501-05 Artwork Label ATEX/CE Marking	3046005	Yes (pdf)
T13022	D	Model_4501-XX_Instruction_Manual	3046005	Yes (pdf)