



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: Sira 05ATEX2084X

4 Equipment: IS-mA1 Sounder, IS-mB1 Beacon & IS-mC1 Combined Sounder/Beacon

5 Applicant: European Safety Systems Limited

6 Address: Impress House
Mansell Road
Acton
London
W3 7QH
UK

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

8 Sira Certification Service, notified body number 0518 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 numbers R52A13291A, R52A14095A and R52A14305A.

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

EN 50014: 1997 + A1 and A2
EN 50020: 2002
EN 50284: 1999

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 and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 1G
EEx ia IIC T4 (-40°C ≤ Ta ≤ +60°C)

Project Number 52A14305
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SCHEDULE

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Re-issued 14 October 2005 to introduce the changes described in report number R52A14095A.
Re-issued 15 November 2005 to introduce the changes described in report number R52A14305A.
Re-issued 18 August 2006 to introduce the changes described in report number R52A15304A.

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DESCRIPTION OF EQUIPMENT

The **IS-mA1 Sounder** is designed to provide an audible warning when activated. It consists of the following mounted in an IP 65, flame retardant, ABS enclosure:

- Sounder printed circuit board assembly
- Inductive sounder transducer

External connections are made to terminals mounted on the sounder printed circuit board via cable entry devices mounted in the wall of the enclosure. The parameters for the IS-mA1 Sounder are as follows:

Terminals	Parameters				
	U _i	I _i	P _i	C _i	L _i
Terminal + w.r.t. Terminal -	28 V	93 mA	660 mW	0	0
Terminals S2 and S3 w.r.t. Terminal -	28 V	0	-	-	-

The **IS-mB1 Beacon** is designed to provide a flashing warning when activated. It consists the following mounted inside an IP 65, flame retardant, ABS enclosure that is fitted with a transparent polycarbonate 'lens':

- Beacon main printed circuit board assembly
- Beacon LED printed circuit board assembly

External connections are made to terminals mounted on the beacon main printed circuit board via cable entry devices mounted in the walls of the enclosure. The parameters for the IS-mB1 Beacon are as follows:

Terminals	Parameters				
	U _i	I _i	P _i	C _i	L _i
Terminal + w.r.t. Terminal -	28 V	660 mA	1.2 W	0	0

The **IS-mC1 Combined Sounder/Beacon** is designed to provide an audible and a flashing warning when activated. It consists of the following mounted inside an IP 65, flame retardant, ABS enclosure that is fitted with a transparent polycarbonate 'lens':

- Sounder printed circuit board assembly
- Inductive sounder transducer
- Beacon main printed circuit board assembly
- Beacon LED printed circuit board assembly

External connections are made to terminals mounted on the sounder printed circuit board assembly and the beacon main printed circuit board assembly via cable entry devices mounted in the walls of the enclosure. The IS-mC1 Combined Sounder/Beacon may be supplied with internal wiring connections between Sounder Terminals + / - and Beacon Terminals + / -, alternatively these connections may be fitted by the user/installer. The parameters for the IS-mC1 Combined Sounder/Beacon are as follows:

	Terminals	Parameters				
		U _i	I _i	P _i	C _i	L _i
Without internal connections:	Sounder Terminals + w.r.t. Sounder Terminals -	28 V	93 mA	660 mW	0	0
	Sounder Terminals S2 & S3 w.r.t. Sounder Terminals -	28 V	0	-	-	-
	Beacon Terminal + w.r.t. Beacon Terminal -	28V	660 mA	1.2 W	0	0
With internal connections	Sounder Terminal + w.r.t. Sounder Terminal -	28 V	93 mA	660 mW	0	0
	Sounder Terminals S2 & S3 w.r.t. Sounder Terminals -	28 V	0	-	-	-

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14 DESCRIPTIVE DOCUMENTS

14.1	Drawing No.	Sheet	Rev.	Date	Description
	CD 5011	1 of 1	A	09 May 05	Circuit Diagram - Sounder Board
	CD 5012	1 of 1	A	09 May 05	Circuit Diagram - Beacon Board
	D 5014	1 of 1	A	03 Jun 05	Certification Label - Sounder - ATEX
	D 5015	1 of 1	C	21 Apr 06	Certification Label - Beacon - ATEX
	D 5016	1 of 1	C	21 Apr 06	Certification Label - Combined Sounder / Beacon - ATEX
	D 5017	1 of 1	A	01 Aug 05	General Assembly - Sounder
	D 5018	1 of 1	A	03 Jun 05	General Assembly - Beacon
	D 5019	1 of 1	A	01 Aug 05	General Assembly - Combined Sounder / Beacon
	D 5021	1 of 1	A	24-Jun-05	PCB Assembly - Sounder
	PL 5021	1 of 1	A	03 Jun 05	Parts List - Sounder PCB
	D 5022	1 of 1	A	24 Jun 05	PCB Assembly - Beacon
	PL 5022	1 of 1	A	03 Jun 05	Parts List - Beacon PCB
	D 5032	1 of 1	A	29 Jun 06	Certification Label - Sounder - ATEX/IECEx/FM
	D 5033	1 of 1	A	29 Jun 06	Certification Label - Beacon - ATEX/IECEx/FM
	D 5034	1 of 1	A	29 Jun 06	Certification Label - Combined Sounder/Beacon - ATEX/IECEx/FM

14.2 Report numbers R52A13291A, R52A14095A, R52A14305A and R52A15304A

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 Conditions for IS-mA1 Sounder

- The equipment has an ingress protection rating of IP65. However, if it has been supplied without cable entry devices, then the user shall ensure that the devices that are fitted will provide an ingress protection that is appropriate to the environment in which it is installed i.e. IP20 or better. If only one of the two cable entries are used, then the unused entry 'knockout' shall be left intact or fitted with a blanking device that ensures ingress protection appropriate to the environment in which it is installed i.e. IP20 or better.
- The total capacitance connected to Terminals + wrt - (i.e. the capacitance of the cable plus any other capacitance) shall not exceed 83 nF.
- The equipment shall not be directly installed in any process where its enclosure might be electrostatically charged by the rapid flow of a non-conductive media.
- The equipment shall only be supplied via Terminals + w.r.t. Terminals - from a barrier having a maximum open circuit voltage U_0 that is $\leq 28V$ and a maximum short circuit current I_0 that is $\leq 93mA$, where I_0 is resistively limited. The barrier shall be ATEX certified by a notified body.

15.2 Conditions for IS-mB1 Beacon

- The equipment has an ingress protection rating of IP65. However, if it has been supplied without cable entry devices, then the user shall ensure that the devices that are fitted will provide an ingress protection that is appropriate to the environment in which it is installed i.e. IP20 or better. If only one of the two cable entries are used, then the unused entry 'knockout' shall be left intact or fitted with a blanking device that ensures ingress protection appropriate to the environment in which it is installed i.e. IP20 or better.

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- The equipment shall not be directly installed in any process where its enclosure might be electrostatically charged by the rapid flow of a non-conductive media.

15.3 Conditions IS-mC1 Combined Sounder/Beacon

- The equipment has an ingress protection rating of IP65. However, if it has been supplied without cable entry devices, then the user shall ensure that the devices that are fitted will provide an ingress protection that is appropriate to the environment in which it is installed i.e. IP20 or better. If only one of the two cable entries are used, then the unused entry 'knockout' shall be left intact or fitted with a blanking device that ensures ingress protection appropriate to the environment in which it is installed i.e. IP20 or better.
- The total capacitance connected to Sounder Terminals + wrt - (i.e. the capacitance of the cable plus any other capacitance) shall not exceed 83 nF.
- The equipment shall not be directly installed in any process where its enclosure might be electrostatically charged by the rapid flow of a non-conductive media.
- The equipment shall only be supplied via Sounder Terminals + w.r.t. Sounder Terminals - from a barrier having a maximum open circuit voltage U_o that is $\leq 28V$ and a maximum short circuit current I_o that is $\leq 93mA$, where I_o is resistively limited. The barrier shall be ATEX certified by a notified body.
- If not already fitted, optional internal wiring connections between Sounder Terminals + / - and Beacon Terminals + / - may be fitted by the user. The wiring used for such connections shall have a minimum radial thickness of insulation of 0.5mm.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in report numbers R52A13291A, R52A14095A and R52A14305A.

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 EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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E2S-Klaxon-GE Part Nos.

E2S Part No.	Klaxon Part No.	GE Part No.	Description	ATEX Cert	CPD Cert	DoC
IS-mB1-R	17-970329GE	FA370	IS Beacon Red	SIRA05ATEX2084X	N/A	DC5003-A
TBC (Red or white LEDs?)	17-970340GE	FA370C	IS Beacon Clear	SIRA05ATEX2084X	N/A	DC5003-A
IS-mA1-R	17-970328GE	AS372	IS Sounder	SIRA05ATEX2084X	0786CPD20338	DC5002-B
BExBG05D24VDC-RED	17-970274GE	FA375	EXD Beacon Red	KEMA00ATEX2006X	N/A	DC2400
BExBG05D24VDC-AMBER	17-970277GE	FA375Y	EXD Beacon Amber	KEMA00ATEX2006X	N/A	DC2400
BExS110D24V	17-970271GE	AS374	EXD Sounder	KEMA99ATEX6312	0786CPD20225	DC2400CPD