IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx SIR 06.0045X issue No.:2	Certificate history: Issue No. 2 (2015-2-23) Issue No. 1 (2009-11-26) Issue No. 0 (2006-11-8)
Status:	**Current**	
Date of Issue:	**2015-02-23** Page 1 of 4	

Applicant: **European Safety Systems Ltd**
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

Electrical Apparatus: **IS-mA1 Sounder, IS-mA2 Sounder, IS-mA3 Sounder, IS-mB1 Beacon & IS-mC1 Combined Sounder/Beacon**

Optional accessory:

Type of Protection: **Intrinsically Safe**

Marking: Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +60°C)

Approved for issue on behalf of the IECEx Certification Body: C Ellaby

Position: Deputy Certification Manager

Signature:
(for printed version)

Date: 2015-02-23

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
SIRA Certification Service
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom

IECEx Certificate of Conformity

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Date of Issue: **2015-02-23** Issue No.: **2**

Manufacturer: **European Safety Systems Ltd**
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2014-10 Edition: 3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
GB/SIR/ExTR06.0103/00 GB/SIR/ExTR09.0189/00 GB/SIR/ExTR15.0024/00

Quality Assessment Report:

GB/SIR/QAR06.0020/00

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The **IS-mA1 Sounder** is designed to provide an audible warning when activated.

The **IS-mA2 Sounder** is similar to the IS-mA1 Sounder, the differences being a different printed circuit board layout and a 'low profile'enclosure base.

The **IS-mA3 Sounder** is similar to the IS-mA1 Sounder, the differences being the addition of several components to the circuit, a different connection arrangement, a different printed circuit board layout and a 'low profile' enclosure base.

The **IS-mB1 Beacon** is designed to provide a flashing warning when activated.

The **IS-mC1 Combined Sounder/Beacon** is designed to provide an audible and a flashing warning when activated.

For a fuller description and associated safety prameters, see the Annexe of this certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

For Conditions of Certification, see the Annexe of this certificate.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 – this Issue introduced the following changes:	
1	Following appropriate re-assessment to demonstrate compliance with the requirements of the latest standards, the documents originally listed in section 9, IEC 60079-0:2000 Edition 3.1 and IEC 60079-11:1999 Edition 4, were replaced by those currently listed, the markings were updated accordingly
Issue 2 – this Issue introduced the following change:	
1.	Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the documents previously listed, IEC 60079-0:2004 Ed 4.0, IEC 60079-11:2006 Ed 5.0 and IEC 60079-26:2006 were replaced by IEC 60079-0:2011 Ed 6, IEC 60079-11:2011 Ed 6 and IEC 60079-26:2014 Ed 3.0

Annex: 06.0045X_Issue2_Annexe.pdf

DESCRIPTION OF APPARATUS

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				
	Ui	Ii	Pi	Ci	Li
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-mA2 Sounder** is similar to the IS-mA1 Sounder, the differences being a different printed circuit board layout and a 'low profile' enclosure base. Cable entry is via a 'knockout' in the bottom of the enclosure base, this enclosure base, and thus the sounder, being designed for attachment to other equipment.

The parameters for the **IS-mA2 Sounder** are as follows:

Terminals	Parameters				
	Ui	Ii	Pi	Ci	Li
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-mA3 Sounder** is similar to the IS-mA1 Sounder, the differences being the addition of several components to the circuit, a different connection arrangement, a different printed circuit board layout and a 'low profile' enclosure base. Cable entry is via a 'knockout' in the bottom of the enclosure base, this enclosure base, and thus the sounder, being designed for attachment to other equipment.

The parameters for the **IS-mA3 Sounder** are as follows:

Terminals	Parameters				
	Ui	Ii	Pi	Ci	Li
Terminal + w.r.t. Terminals S2 and S3	28 V	93 mA	660 mW	0	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				
	Ui	Ii	Pi	Ci	Li
Terminal + w.r.t. Terminal -	28 V	660mA	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

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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**				
		Ui	**Ii**	**Pi**	**Ci**	**Li**
Without 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 Terminal -	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 Terminal -	28 V	0	-	-	-

CONDITIONS OF CERTIFICATION

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 Terminal + w.r.t. Terminal – (i.e. the capacitance of the cable plus any other capacitance) shall not exceed 83 nF.
- The equipment shall only be supplied via Terminal + w.r.t. Terminal – from a barrier having a maximum open circuit voltage Uo that is ≤28 V and a maximum short-circuit current Io that is ≤93 mA, where Io is resistively limited.
- The enclosure is non-conducting and may generate an ignition-capable level of electrosatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces, additionally, cleaning of the equipment should be done only with a damp cloth.

IS-mA2 Sounder

- The equipment has an ingress protection rating of IP65. However, as cable entry is via a 'knockout' in the bottom of the enclosure base, the user shall ensure that this enclosure base is sealed to whatever it is attached by a method that provides ingress protection appropriate to the environment in which it is installed i.e. IP20 or better. An 'O' ring fitted within the outer rim of the bottom of the enclosure base may be used for this purpose.
- The total capacitance connected to Terminal + w.r.t. Terminal – (i.e. the capacitance of the cable plus any other capacitance) shall not exceed 83 nF.
- The equipment shall only be supplied via Terminal + w.r.t. Terminal – from a barrier having a maximum open circuit voltage Uo that is ≤28 V and a maximum short-circuit current I_o that is ≤93 mA, where Io is resistively limited.
- The enclosure is non-conducting and may generate an ignition-capable level of electrosatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces, additionally, cleaning of the equipment should be done only with a damp cloth.

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IS-mA3 Sounder

- The equipment has an ingress protection rating of IP65. However, as cable entry is via a 'knockout' in the bottom of the enclosure base, the user shall ensure that this enclosure base is sealed to whatever it is attached by a method that provides ingress protection appropriate to the environment in which it is installed i.e. IP20 or better. An 'O' ring fitted within the outer rim of the bottom of the enclosure base may be used for this purpose.
- The total capacitance connected to Terminal + w.r.t. Terminal S2 and S3 (i.e. the capacitance of the cable plus any other capacitance) shall not exceed 83 nF.
- The equipment shall only be supplied via Terminal + w.r.t. Terminals S2 and S3 from a barrier having a maximum open circuit voltage Uo that is ≤28 V and a maximum short-circuit current Io that is ≤93 mA, where Io is resistively limited.
- The enclosure is non-conducting and may generate an ignition-capable level of electrosatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces, additionally, cleaning of the equipment should be done only with a damp cloth.

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.
- The enclosure is non-conducting and may generate an ignition-capable level of electrosatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces, additionally, cleaning of the equipment should be done only with a damp cloth.

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 Terminal + w.r.t. Terminal – (i.e. the capacitance of the cable plus any other capacitance) shall not exceed 83 nF.
- The equipment shall only be supplied via Sounder Terminal + w.r.t. Sounder Terminal – from a barrier having a maximum open circuit voltage Uo that is ≤28 V and a maximum short-circuit current Io that is ≤93 mA, where Io is resistively limited.
- 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 0.5 mm.
- The enclosure is non-conducting and may generate an ignition-capable level of electrosatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces, additionally, cleaning of the equipment should be done only with a damp cloth.

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