



# 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](http://www.iecex.com)

Certificate No.: **IECEX SIR 04.0039X** issue No.:4

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

Certificate history:  
Issue No. 4 (2015-2-23)  
Issue No. 3 (2013-10-31)  
Issue No. 2 (2013-8-8)  
Issue No. 1 (2009-11-26)  
Issue No. 0 (2006-4-24)

Electrical Apparatus: **IS-L101L Beacon and IS-DL105 Sounder/Beacon**  
*Optional accessory:*


Type of Protection: **Intrinsic safety**

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)

  
\_\_\_\_\_  
**2015-02-23**

Date:

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](http://www.iecex.com).

Certificate issued by:

**SIRA Certification Service**  
Rake Lane  
Eccleston  
Chester  
CH4 9JN  
United Kingdom

**sira**  
CERTIFICATION





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Manufacturer: **European Safety Systems Ltd**  
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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:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-11 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-26 : 2014-10</b> 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/ExTR06.0038/00  
GB/SIR/ExTR13.0281/00

GB/SIR/ExTR09.0189/00  
GB/SIR/ExTR15.0023/00

GB/SIR/ExTR13.0136/00

#### 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-L101L Beacon is designed to provide a flashing warning when activated. It consists of two printed circuit board assemblies, one containing the main circuit and the other several LEDs. These are mounted in an IP66, flame retardant ADS that is fitted with a transparent polycarbonate 'lens'. One of two alternative LED boards may be fitted, each having different types of LED mounted. External connections are made to terminals mounted on the main printed circuit board via cable entry devices mounted in the walls of the enclosure. The equipment has the following parameters:

#### Terminal "+" w.r.t. Terminal "-"

$U_i = 28 \text{ V}$   
 $I_i = 660 \text{ mA}$   
 $P_i = 1.2 \text{ W}$   
 $C_i = 0$   
 $L_i = 0$

#### Terminal "S+" w.r.t. Terminal "S-"

$U_o = 16.8 \text{ V}$   
 $I_o = 660 \text{ mA}$   
 $P_o = 1.2 \text{ W}$

The parameters above are based on Terminal + being considered internally electrically connected to Terminal S+ via internal voltage clamping zener diodes of maximum voltage 16.8 V and Terminal - being considered internally electrically connected to Terminal S-.

#### Terminals "Ac.Sw"

$U_o = 16.8 \text{ V}$   
 $I_o = 3.61 \text{ mA}$   
 $P_o = 15.2 \text{ mW}$

### CONDITIONS OF CERTIFICATION: YES as shown below:

1. The enclosure of the IS-L101L Beacon is non-conducting and may generate an ignition-capable level of electrostatic 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.
2. The equipment has an ingress protection rating of IP 66. 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 shall be fitted with a blanking device that ensures ingress protection appropriate to the environment in which it is installed i.e. IP20 or better.
3. The enclosure of the IS-DL105 Sounder/Beacon is manufactured from cast aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in an area requiring Equipment Protection Level Ga.
4. When the IS-DL105 Sounder/Beacon is powered via two separate barriers, they shall be installed as separate intrinsically safe circuits; the Sounder shall not be electrically connected to the Beacon and they shall not share a common return line.



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

<b>Issue 1</b> – 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.
2.	The IS-L101L Beacon was changed to modify the PCB track and component layout.
<b>Issue 2</b> – this Issue introduced the following change:	
1.	The use of a cast aluminium enclosure material and an alternative to the existing plastic material was approved. The conditions of Certification are amended to reflect this change.
<b>Issue 3</b> – this Issue introduced the following change:	
1.	It was clarified that the cast aluminium enclosure versions that were first recognised in Issue 2 of this certificate are in fact the model IS-DL105 Combined Sounder/Beacon; to account for the new model, the Conditions of Certification and associated drawings were reviewed and revised accordingly. The IS-DL105 is described in the Certificate Annexe.
<b>Issue 4</b> – 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

**Annexe to:** IECEx SIR 04.0039X Issue 4 Annexe  
**Applicant:** European Safety Systems Ltd.,  
**Apparatus:** IS-L101L Beacon and  
IS-DL105 Sounder/Beacon



The IS-DL105 Sounder/Beacon is designed to provide an audible and flashing warning when activated. It consists of three printed circuit board assemblies, one for the sounder, connected to an inductive sounder transducer; and two printed circuit board assemblies for the beacon, one containing the main circuit and the other several LEDs.

These are mounted in an IP 66, cast aluminium enclosure with a borosilicate glass dome. External connections are made to terminals mounted on the printed circuit board via a cable entry device mounted in the wall of the enclosure.

Two alternative LED boards may be fitted, each being fitted with different types of LED. External connections are made to terminals mounted on the main printed circuit board via cable entry devices mounted in the walls of the enclosure.

Sounder and Beacon powered through a single barrier		
The barrier may be connected either to the Sounder or to the Beacon, as shown below:		
<b>Sounder PCBA</b>	<b>OR</b>	<b>Beacon PCBA</b>
Input to Terminals + w.r.t. Terminal:		Input to Terminals + w.r.t. Terminals -:
$U_i = 28\text{ V}$ $I_i = 93\text{ mA}$ $P_i = 660\text{ mW}$ $C_i = 0$ $L_i = 0$		$U_i = 28\text{ V}$ $I_i = 93\text{ mA}$ $P_i = 660\text{ mW}$ $C_i = 0$ $L_i = 0$
In addition, a diode return barrier or isolator may be connected to Terminal S2 w.r.t. Terminal – and Terminal S3 w.r.t. Terminal – with the following parameters: $U_i = 28\text{ V}$ $I_i = 0$		The output parameters at Terminal S+ w.r.t. Terminal S- are: $U_o = 16.8\text{ V}$ $I_o = 93\text{ mA}$ $P_o = 660\text{ mW}$ These are based on Terminal + being considered internally electrically connected to Terminal S+ via internal voltage clamping zener diodes of maximum voltage 16.8V and Terminal - being considered internally electrically connected to Terminal S-.
		The output parameters at Terminals Ac.Sw are: $U_o = 16.8\text{ V}$ $I_o = 3.61\text{ mA}$ $P_o = 15.2\text{ mW}$

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**Applicant:** European Safety Systems Ltd.,  
**Apparatus:** IS-L101L Beacon and  
IS-DL105 Sounder/Beacon



Sounder and Beacon powered through two separate barriers		
One barrier may be connected to the Sounder and a second to the Beacon, as shown below. The Sounder and Beacon shall be regarded as separate intrinsically safe circuits and shall not be electrically connected to each other.		
Sounder PCBA	<b>AND</b>	Beacon PCBA
Input to Terminals + w.r.t. Terminal -:		Input to Terminals + w.r.t. Terminals -:
$U_i = 28\text{ V}$ $I_i = 93\text{ mA}$ $P_i = 660\text{ mW}$ $C_i = 0$ $L_i = 0$		$U_i = 28\text{ V}$ $I_i = 660\text{ mA}$ $P_i = 1.2\text{ W}$ $C_i = 0$ $L_i = 0$
In addition, a diode return barrier or isolator may be connected to Terminal S2 w.r.t. Terminal - and Terminal S3 w.r.t. Terminal - with the following parameters: $U_i = 28\text{ V}$ $I_i = 0$		The output parameters at Terminal S+ w.r.t. Terminal S- are: $U_o = 16.8\text{ V}$ $I_o = 660\text{ mA}$ $P_o = 1.2\text{ W}$ These are based on Terminal + being considered internally electrically connected to Terminal S+ via internal voltage clamping zener diodes of maximum voltage 16.8V and Terminal - being considered internally electrically connected to Terminal S-.
		The output parameters at Terminals Ac.Sw are: $U_o = 16.8\text{ V}$ $I_o = 3.61\text{ mA}$ $P_o = 15.2\text{ mW}$