



UNITED KINGDOM CONFORMITY ASSESSMENT

1 **UKCA UK TYPE EXAMINATION CERTIFICATE**

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 Certificate Number: **CSAE 21UKEX2552X** Issue: **0**

4 Product: **IS-L101L Beacon and IS-DL105 Sounder /Beacon**

5 Manufacturer: **European Safety System Limited**

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

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

8 CSA Group Testing UK Limited, Approved Body number 0518, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations. The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-11:2012

Except in respect of those requirements listed at Section 16 of the schedule to this certificate. The above standards may not appear on the UKAS Scope of Accreditation, but have been added through flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This UK TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall be in accordance with Regulation 41 and include the following:



II 1G  
Ex ia IIC T4 Ga  
 $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

Name: Michelle Halliwell  
Title: Director of Operations



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#### 13 DESCRIPTION OF PRODUCT

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 inside an IP 66, flame retardant, ABS enclosure that is fitted with a transparent polycarbonate 'lens'. 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.

Terminal + w.r.t.  $U_i = 28\text{ V}$   
Terminal:  $I_i = 660\text{ mA}$   
 $P_i = 1.2\text{ W}$   
 $C_i = 0$   
 $L_i = 0$

Terminal S+ w.r.t.  $U_o = 16.8\text{ V}$   
Terminal S:  $I_o = 660\text{ mA}$   
 $P_i = 1.2\text{ W}$

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

Terminal Ac.Sw:  $U_o = 16.8\text{ V}$   
 $I_o = 3.61\text{ mA}$   
 $P_i = 15.2\text{ mW}$

#### Incorporated amendments

The product description includes the following applicable amendments from the previous supporting assessments. The amendments are numbered to include a reference to the variation at which these were introduced.

**Amendment 1** – This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the latest standards, the documents originally listed in section 9, EN 50014: 1997 + A1 and A2, EN 50020: 2002 and EN 50284: 1999, were replaced by those currently listed, the markings in section 12 were updated accordingly.
- ii. The IS-L101L Beacon was changed to modify the PCB track and component layout.

**Amendment 2** - This variation introduced the following change:

- i. The use of a cast aluminium enclosure material as an alternative to the existing plastic material was approved. The Special conditions for Safe Use were amended to reflect this change.

**Amendment 3** - This variation introduced the following change:

- i. It was clarified that the cast aluminium enclosure versions that were first recognised in Issue 4 of this certificate are in fact the model IS-DL105 Combined Sounder/Beacon; to account for the new model, the Special Conditions for Safe Use and associated drawings were reviewed and revised accordingly. The IS-DL105 is described below:

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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:

Sounder PCBA

OR

Beacon PCBA

Input to Terminals + w.r.t.

Input to Terminals + w.r.t. Terminals -:

Terminal:

$U_i = 28\text{ V}$

$I_i = 93\text{ mA}$

$P_i = 660\text{ mW}$

$C_i = 0$

$L_i = 0$

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:

$U_i = 28\text{ V}$   $I_i = 0$

$U_i = 28\text{ V}$

$I_i = 93\text{ mA}$

$P_i = 660\text{ mW}$

$C_i = 0$

$L_i = 0$

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:

$I_o = 3.61\text{ mA}$

$U_o = 16.8\text{ V}$

$P_o = 15.2\text{ mW}$

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

AND

Beacon PCBA

Input to Terminals + w.r.t

Input to Terminals + w.r.t. Terminals -:

Terminal -:

$U_i = 28\text{ V}$

$I_i = 93\text{ mA}$

$P_i = 660\text{ mW}$

$U_i = 28\text{ V}$

$I_i = 660\text{ mA}$

$P_i = 1.2\text{ W}$

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Ci = 0  
Li = 0

Ci = 0  
Li = 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:  
Ui = 28 V li = 0

The output parameters at Terminal S+ w.r.t. Terminal S- are:  
Uo = 16.8 V  
Io = 660 mA  
Po = 1.2 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:  
Uo = 16.8 V  
Io = 3.61 mA  
Po = 15.2 mW

**Amendment 4** - This variation introduced the following changes:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the documents previously listed, EN 60079-0:2006, EN 60079-11:2007 and EN 60079-26:2007 were replaced by EN 60079-0:2012, EN 60079-11:2012 and IEC 60079-26:2014 Ed 3.0.

**Amendment 5** - This variation introduced the following changes:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the document previously listed, EN 60079-0:2012 was replaced by EN IEC 60079-0:2018.
- ii. IEC 60079-26:2014 Ed 3.0 was removed as IEC 60079-26 is not applicable to Ex ia Ga equipment.

**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexe.

**14.2 Associated Reports and Certificate History**

Issue	Date	Report number	Comment
0	27 June 2022	R80072291B	The release of the prime certificate.

**15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)**

- 15.1 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.
- 15.2 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



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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.

- 15.3 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.
- 15.4 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.
- 16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (REGULATIONS SCHEDULE 1)**  
In addition to the Essential Health and Safety Requirements covered by the standards listed in Section 9, all other requirements are demonstrated in the relevant reports.
- 17 **PRODUCTION CONTROL**
- 17.1 Holders of this certificate are required to comply with production control requirements defined in Schedule 3A, as applicable, and CSA Group Testing UK Regulations for Certificate Holders



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## Certificate Annexe

Certificate Number: CSAAE 21UKEX2552X  
Product: IS-L101L Beacon and IS-DL105 Sounder /Beacon  
Manufacturer: European Safety System Limited

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### Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
PL4521	1 of 1	A	02 Nov 04	IS-A105N Sounder – parts list
D4525	1 of 1	A	01 Nov 04	IS-A105N Sounder – assembly
D4524	1 of 1	A	25 Oct 04	IS-A105N Sounder – artwork
CD4521	1 of 1	A	02 Nov 04	IS-A105N Sounder – circuit diagram
D 4623	1 of 1	B	11 Nov 09	Printed Circuit Board
CD 4621	1 of 1	A	03 Dec 04	Circuit Diagram
PL 4621	1 of 1	A	03 Dec 04	Parts List
D 4621	1 of 1	A	03 Dec 04	General Arrangement
D187-99-201-SC-UK	1 of 1	A	27 Apr 22	IS-DL105 Sounder Beacon Product label, UKex Scheduled drawing
D187-00-201-IS-SC-UK	1 to 3	1	27 Apr 22	IS-DL105 Sounder/Beacon Instruction Manual
D 4622-SC-UK	1 of 1	A	27 Apr 22	IS-L101L Beacon Label

