[1] **UNITED KINGDOM CONFORMITY ASSESSMENT**

UK-TYPE EXAMINATION CERTIFICATE

[2] **Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

[3] UK-Type Examination Certificate No.: **UL21UKEX2132X Rev. 1**

[4] Product: **Loudspeakers (D1xL*), Sounders (D1xS*) and Combined Sounder Beacons (D1xC*)**

[5] Manufacturer: **European Safety Systems Limited**

[6] Address: **Impress House, Mansell Road, Acton, London W3 7QH United Kingdom**

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

[8] UL International (UK) Ltd, Approved Body number 0843, in accordance with Regulation 44 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), 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 report **DK/ULD/ExTR19.0008/02**

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

EN IEC 60079-0:2018	**EN 60079-1:2014**
EN 60079-31:2014	**IEC 60079-31, Edition 3.0 (2022-01)**

Except in respect of those requirements listed at section 19 of the schedule to this certificate.

[10] If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified 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 the product shall include the following:

Ex II 2 G Ex db IIC T6 …T3 Gb

Ex II 2 D Ex tb IIIC T82°C …T145°C Db

Certification Officer
Andrew Moffat

This is to certify that the sample(s) of the Product described herein (“Certified Product”) has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the UKEx Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Regulations. The test results may not be used, in whole or in part, in any other document without UL’s prior written approval.

Date of issue: 2021-12-14

Re-issued: 2023-09-14

Approved Body UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade Road, Basingstoke RG24 8AH, UK
Phone : +44 (0)1256 312100

[13] [14]

Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2132X Rev. 1

[15] Description of Product

D1xS* (sounder) comprises an Aluminium enclosure housing components to generate selectable tones. Up to three M20 threaded entries may be provided for installation of appropriately certified cable entry devices by the end user.
The D1xL* (loudspeaker) utilizes the same enclosures and houses components to amplify sound.
D1xC* (sounder beacon) is the same housing as the D1xS* except on one end the beacon assembly is mounted. The lamp is protected by a glass lens and a stainless steel wire guard. Additional electrical components associated with the operation of the 5 and 10 Joule beacon are installed within the housing and reflected by the nomenclature with “AC” or “DC” followed by the voltage.

Model Nomenclature:

Sounder:

Example - D1xS1-DC024-A

Model	**Model Voltage** (refer to electrical tables below)	**Suffix**
D1xS1 – low power	AC230	-A – Standard Unit -S – SIL Unit (DC024 only)
	DC024	
D1xS2 – medium and high power	AC230	
	DC024	

All models detailed are permitted to use any radial or flare horn.

Sounder Beacon:

Example - D1xC1X05-DC024-A

Model	**Beacon Energy**	**Model Voltage** (refer to electrical input tables)	**Suffix**
D1xC1X – low power sounder	05- 10-	AC115	-A – Standard Unit
D1xC2X – medium and high power sounder		AC230	
		DC024	

All models detailed are permitted to use any radial or flare horn.

Loudspeaker:

Example - D1xL1FV070-A

Model	
D1xL1FV725-A	15W, 25V to 70V loudspeaker, standard unit
D1xL2FV725-A	25W, loudspeaker, small flare
D1xL2HV725-A	25W, loudspeaker, large flare
D1xL1FV070	15W 70V loudspeaker
D1xL1FV070-A	15W 70V loudspeaker, standard unit
D1xL2FV070	25W 70V loudspeaker, small flare
D1xL2HV070	25W 70V loudspeaker, large flare
D1xL2FV070-A	25W 70V loudspeaker, standard unit, small flare
D1xL2HV070-A	25W 70V loudspeaker, standard unit, large flare
D1xL1FV100-A	15W 100V loudspeaker, standard unit
D1xL2FV100-A	25W 100V loudspeaker, standard unit, small flare
D1xL2HV100-A	25W 100V loudspeaker, standard unit, large flare
D1xL1FR008-A	15W, 8 ohm resistance loudspeaker, standard unit
D1xL1FR016-A	15W, 16 ohm resistance loudspeaker, standard unit
D1xL2FR008-A	25W 8 ohm resistance loudspeaker, standard unit, small flare
D1xL2FR016-A	25W 16 ohm resistance loudspeaker, standard unit, small flare
D1xL2HR008-A	25W 8 ohm resistance loudspeaker, standard unit, large flare
D1xL2HR016-A	25W 16 ohm resistance loudspeaker, standard unit, large flare
D1xL1-AXIS-A	12.95W PoE input, loudspeaker, small flare
D1xL2-AXIS-A	12.95W PoE input, loudspeaker, large flare

All models detailed are permitted to use any radial or flare horn.

The optical radiation output of the product with respect to explosion protection, according to Schedule 1 clause 16 of the Regulation 2016 No. 1107 (as amended by UKSI 2019:696) is covered in this certificate based on Exception 1) to the scope of EN 60079-28:2015 .

Temperature range
The relation between ambient temperature and the assigned temperature class is as follows:

Loudspeaker:

[13]

[14]

Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2132X Rev. 1

Models	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
D1xL1-V070 (-A) D1xL1-R008 (-A) D1xL1-R016 (-A) D1xL1-AXIS-A	T5	T86°C	-55°C to +75°C
	T6	-	-55°C to +60°C
D1xL2-V070 (-A) D1xL2-R008 (-A) D1xL2-R016 (-A) D1xL2-AXIS-A	T5	T91°C	-55°C to +75°C
	T6	-	-55°C to +55°C
D1xL1-V100-A	T5	T92°C	-55°C to +75°C
	T6	-	-55°C to +60°C
D1xL2-V100-A	T4	T98°C	-55°C to +75°C
	T5	-	-55°C to +70°C
	T6	-	-55°C to +55°C
D1xL1-V725-A	T6	-	-55°C to +60°C
	T5	T91°C	-55°C to +75°C
D1xL2-V725-A	T6	-	-55°C to +55°C
	T5	-	-55°C to +70°C
	T4	T97°C	-55°C to +75°C

Sounder Temperature Range:

Model	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
D1xS1-DC024-A	T5	T84°C	-55°C to +75°C
	T6	-	-55°C to +70°C
D1xS1-DC024-S	T5	T84°C	-55°C to +75°C
	T6	-	-55°C to +70°C
D1xS1-AC230-A	T5	T82°C	-55°C to +75°C
	T6	-	-55°C to +70°C
D1xS2-DC024-A	T5	T95°C	-55°C to +75°C
	T6	-	-55°C to +60°C
D1xS2-DC024-S	T5	T95°C	-55°C to +75°C
	T6	-	-55°C to +60°C
D1xS2-AC230-A	T5	T93°C	-55°C to +75°C
	T6	-	-55°C to +60°C

Sounder Beacon Temperature Range:

Model	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
D1xC1X05-DC024-A	T4	T115°C	-55°C to +75°C
	T5	-	-55°C to +55°C
	T6	-	-55°C to +40°C
D1xC1X05-AC115-A	T4	T122°C	-55°C to +75°C
	T5	-	-55°C to +45°C
D1xC1X05-AC230-A	T4	T122°C	-55°C to +75°C
	T5	-	-55°C to +45°C
D1xC2X05-DC024-A	T4	T115°C	-55°C to +75°C
	T5	-	-55°C to +55°C
	T6	-	-55°C to +40°C
D1xC2X05-AC115-A	T4	T122°C	-55°C to +75°C
	T5	-	-55°C to +45°C
D1xC2X05-AC230-A	T4	T122°C	-55°C to +75°C
	T5	-	-55°C to +45°C
D1xC1X10-DC024-A	T3	T137°C	-55°C to +75°C
	T4	-	-55°C to +65°C
D1xC1X10-AC115-A	T3	T145°C	-55°C to +75°C
	T4	-	-55°C to +60°C
D1xC1X10-AC230-A	T3	T145°C	-55°C to +75°C
	T4	-	-55°C to +60°C

D1xC2X10-DC024-A	T3	T137°C	-55°C to +75°C
	T4	-	-55°C to +65°C
D1xC2X10-AC115-A	T3	T145°C	-55°C to +75°C
	T4	-	-55°C to +60°C
D1xC2X10-AC230-A	T3	T145°C	-55°C to +75°C
	T4	-	-55°C to +60°C

Electrical data

Loudspeakers:

Model	Voltage Range	Frequency
D1xL1-V725, D1xL2-V725, D1xL1-V725-A, D1xL2-V725-A	70V Line / 25V Line	N/A
D1xL1-V070, D1xL2-V070, D1xL1-V070-A, D1xL2-V070-A	70V Line	N/A
D1xL1-V100-A, D1xL2-V100-A	100V Line	N/A
D1xL1-R008, D1xL1-R008-A	10.95V Max. I/P	N/A
D1xL1-R016, D1xL1-R016-A	15.49V Max. I/P	N/A
D1xL2-R008, D1xL2-R008-A	14.14V Max. I/P	N/A
D1xL2-R016, D1xL2-R016-A	20.00V Max. I/P	N/A
D1xL1-AXIS-A, D1xL2-AXIS-A	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 (Max. 12.95 W)	N/A

'-' Horn Type

Sounders:

Model	Sounder PCBA Power Mode	Voltage Range	Frequency
D1xS1-DC024-A	Low	11.5-54VDC	-
D1xS2-DC024-A	Medium & High		
D1xS1-DC024-S	Low	20-28VDC	-
D1xS2-DC024-S	Medium & High		
D1xS1-AC230-A	Low	100-240VAC	50/60Hz
D1xS2-AC230-A	Medium & High		

'-' Horn Type

Sounder Beacons:

Model	Sounder PCBA Power Mode	Voltage Range	Frequency
D1xC1X05-DC024-A, D1xC1X10-DC024-A	Low	20-28VDC	-
D1xC2X05-DC024-A, D1xC2X10-DC024-A	Medium & High		
D1xC1X05-AC115-A, D1xC1X10-AC115-A,	Low	110-120VAC	50/60Hz
D1xC2X05-AC115-A, D1xC2X10-AC115-A	Medium & High		
D1xC1X05-AC230-A D1xC1X10-AC230-A	Low	220-240VAC	50/60Hz
D1xC2X05-AC230-A, D1xC2X10-AC230-A	Medium & High		

'-' Horn Type

[13] [14]

Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2132X Rev. 1

Routine tests
D1xC* Units only:
Routine overpressure tests in accordance with EN 60079-1:2014 shall be conducted on a number of units (detailed below) in accordance with clause 16.6, at a pressure of 222 psi / 15.3 bar for a duration of not less than 10 seconds. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection. The cement joint is not permitted to leak. If there are any non-compliant results, all remaining samples in the batch and future batches shall be tested at 1.5 times the reference pressure until confidence is established to reconsider batch testing.

- For a production batch up to 100, a sampling of 8 needs to be tested at 1.5 times the reference pressure with no failure.
- For a production batch from 101-1000, a sampling of 32 needs to be tested at 1.5 times the reference pressure with no failures.
- For a production batch from 1001 up to 10,000, a sampling of 80 needs to be tested at 1.5 times the reference pressure with no failures.
- Batches above 10,000 must be subdivided into smaller batches.

[16] Test Report No. (associated with this certificate issue)
The test report no. is provided under item no. [8] on page 1 of this UK-Type Examination Certificate.

[17] Specific conditions of use:

- No repair to the flameproof joints is permitted.

[18] Conditions of certification:
None

[19] Essential Health and Safety Requirements (Regulations Schedule 1)
In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

Additional information

The trademark e2S warning signals will be used as the company identifier on the marking label.

The manufacturer shall inform the approved body concerning all modifications to the technical documentation as described in UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1.

[13] [14]

Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2132X Rev. 1

[20] Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
D1x Combined Sounder Beacon GA Scheduled Drawing	D190-00-301-SC	G	2023-09-04
D1x Sounder GA Scheduled Drawing	D190-00-001-SC	H	2023-09-04
D1xC1/D1xC2 24V DC 5J Driver Board	D190-26-581-CL-SC	C	2015-02-13
D1xC1/D1xC2 24V DC 5J Tube Board	D190-28-581-CL-SC	C	2015-02-13
D1xC1/D1xC2 5J 115VAC Driver Board	D190-36-581-CL-SC	C	2015-02-13
D1xC1/D1xC2 5J 230VAC Driver Board	D190-37-581-CL-SC	C	2015-02-13
D1xC1/D1xC2 5J 230VAC Tube Board	D190-38-581-CL-SC	C	2015-02-13
Global SIL2 Sounder monitor Circuit Diagram	D221-26-251-CD-SC	A	2019-09-15
Global A112N/A121 DC Sounder Circuit Diagram	D221-28-001-CD-SC	C	2021-02-24
D1xC1/D1xC2 5J & 10J DC Beacon Driver UL Approved Diagram	D190-26-581-CD-SC	B	2014-10-16
D1xC1 / D1xC2 5J & 10J DC Beacon Tube UL Approved Diagram	D190-28-581-CD-SC	C	2015-02-13
D1xC1 / D1xC2 115V & 230V 5J & 10J AC Beacon Driver UL Approved Diagram	D190-36-581-CD-SC	C	2015-02-13
D1xC1/D1xC2 5J & 10J AC Beacon Tube UL Approved Diagram	D190-38-581-CD-SC	C	2015-02-10
D1xS1 10-30 VDC UL Approved Circuit Diagram	D190-28-101-CD-SC	B	2015-06-02
D1xS1 115/230 VAC UL Approved Circuit Diagram	D190-38-101-CD-SC	B	2015-06-02
D1xS1 Sounder Labels ATEX/IECEx Gas Approved	D190-99-001-SC	E	2023-09-04
D1xC1 Combined Labels UL Gas Approved ATEX/IECEx	D190-99-301-SC	D	2021-11-29
Global A112n/A121 Class D Power amplifier circuit diagram	D221-28-051-CD-SC	B	2020-07-09
Global A112N/A121 AC Sounder Circuit Diagram	D221-38-001-CD-SC	B	2020-02-18
SIL2 Global Sounder PCBA	D221-26-251-CL-SC	A	2020-01-07
Global A112N/A121 DC 10-60V	D221-28-001-CL-SC	B	2021-04-20
Class D Amplifier	D221-28-051-CL-SC	B	2020-06-22
Global A112N/A121 AC PCBA Assy	D221-38-001-CL-SC	B	2021-04-21
D1xL1/D1xL2 Loudspeaker Labels ATEX/IECEx Approval	D190-99-201-SC	B	2023-08-16
D1xL1 & D1xL2 Loudspeaker Range GA	D190-00-201-SC	F	2023-09-04
D1x L1 LOUDSPEAKER UL CIRCUIT DIAGRAM	D190-45-201-CD-SC	B	2021-11-23
D1x L2 LOUDSPEAKER UL CIRCUIT DIAGRAM	D190-45-251-CD-SC	B	2021-11-23
D1xS1 Installation Instructions	D190-00-001-IS-SC-ATEX	A	2021-11-29
D1xS2 Installation Instructions	D190-00-101-IS-SC-ATEX	A	2021-11-29
D1xL1 & L2 Installation Instructions	D190-00-201-IS-SC-ATEX	B	2023-08-16
D1xC1 & C2 Installation Instructions	D190-00-301-IS-SC-ATEX	A	2021-11-29
D1xL1 & D1xL2 line in & low impedance loudspeaker wiring diagrams	D190-06-201	2	2023-02-08
70V line audio matching transformer 25W	D 24104	A	2003-04-24
70V line audio matching transformer 15W	D 24105	A	2003-04-24
100V line audio matching transformer 25W	D 2418	B	2001-09-04
100V line audio matching transformer 15W	D 2419	B	2001-09-04
D1xL Line Transformer 15W 70/25V Line	D243-80-175	1	2023-06-20
D1xL Line Transformer 25W 70/25V Line	D243-80-275	1	2023-06-20
D1xS1/D2xS2 Sounder Labels UKCA Approval	D190-99-001-SC-UK	B	2023-09-04
D1xC1/D1xC2 COMBINED LABELS UKCA APPROVAL	D190-99-301-SC-UK	A	2021-12-10

[13]

[14]

Schedule
UK-TYPE EXAMINATION CERTIFICATE No.
UL21UKEX2132X Rev. 1

Title:	Drawing No.:	Rev. Level:	Date:
D1xS1 Installation Instructions	D190-00-001-IS-SC-UK	A	2021-12-10
D1xS2 Installation Instructions	D190-00-101-IS-SC-UK	A	2021-12-10
D1xL1 & D1xL2 Installation Instructions	D190-00-201-IS-SC-UK	A	2021-12-10
D1xC1 & D1xC2 Installation Instructions	D190-00-301-IS-SC-UK	A	2021-12-10