[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. 0**

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

[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 **UKRCC-4789853593.8.1**

[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**

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 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 T82ºC …T145ºC Gb

Certification Manager
David Lloyd

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

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

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[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.

Loudspeaker Model Nomenclature:
D1xL1-R008-A
I II III

I – Model Type
D1xL1 – 15 Watt Loudspeaker
D1xL2 – 25 Watt Loudspeaker

II – Input Type
R008 – 8 Ohm
R0016 – 16 Ohm
V070 – 70V Line
V100 – 100V Line
AXIS – Power Over Ethernet

III – Unit Type
-A – Standard Unit

Sounder Model Nomenclature:

D1xS1-AC230-A
I II III

I – Model Type
D1xS1 – Sounder Low Power Mode
D1xS2 – Sounder Medium or High Power Mode

II – Voltage

DC024 – 24Vdc
AC230 – 230Vac

III. – Unit Type
-A – Standard Unit
-S – SIL Unit

Sounder Beacon Model Nomenclature:

D1xC1X05-AC230-A
I II III IV

I – Model Type
D1xC1 – Sounder Beacon Low Power Mode
D1xC2 – Sounder Beacon Medium or High Power Mode

II – Beacon Energy
X05 – 5 Joule
X10 – 10 Joule

III – Voltage

DC024 – 24Vdc
AC115 – 115Vac
AC230 – 230Vac

IV. – Unit Type
-A – Standard Unit

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

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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 not covered in this certificate.

Temperature range

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

Loudspeaker Temperature Range:

Models	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
D1xL1-V070(-A) D1xL1-R008(-A) D1xL1-R016(-A) D1xL1-AXIS-A	T5	T86ºC	-55ºC to +75ºC
	T6	-	-55ºC to +60ºC
D1xL2-V070(-A) D1xL2-R008 (-A) D1xL2-R016(-A) D1xL2-AXIS-A	T5	T91ºC	-55ºC to +75ºC
	T6	-	-55ºC to +55ºC
D1xL1-V100-A	T5	T92ºC	-55ºC to +75ºC
	T6	-	-55ºC to 60ºC
D1xL2-V100-A	T4	T98ºC	-55ºC to 75ºC
	T5	-	-55ºC to 70ºC
	T6	-	-55ºC to 55ºC

Sounder Temperature Range:

Model	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
D1xS1-DC024-A Low Power	T5	T84ºC	-55ºC to +75ºC
	T6	-	-55ºC to +70ºC
D1xS1-DC024-S Low Power	T5	T84ºC	-55ºC to +75ºC
	T6	-	-55ºC to +70ºC
D1xS1-AC230-A Low Power	T5	T82ºC	-55ºC to +75ºC
	T6	-	-55ºC to +70ºC
D1xS2-DC024-A Medium and High Power	T5	T95ºC	-55ºC to +75ºC
	T6	-	-55ºC to +60ºC
D1xS2-DC024-S Medium and High Power	T5	T95ºC	-55ºC to +75ºC
	T6	-	-55ºC to +60ºC
D1xS2-AC230-A Medium and High Power	T5	T93ºC	-55ºC to +75ºC
	T6	-	-55ºC to +60ºC

Sounder Beacon Temperature Range:

Model	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
D1xC1X05-DC024-A Low Power	T4	T115ºC	-55ºC to +75ºC
	T5	-	-55ºC to +55ºC
	T6	-	-55ºC to +40ºC
D1xC1X05-AC115-A Low Power	T4	T122ºC	-55ºC to +75ºC
	T5	-	-55ºC to +45ºC
D1xC1X05-AC230-A Low Power	T4	T122ºC	-55ºC to +75ºC
	T5	-	-55ºC to +45ºC
D1xC2X05-DC024-A Medium and High Power	T4	T115ºC	-55ºC to +75ºC
	T5	-	-55ºC to +55ºC
	T6	-	-55ºC to +40ºC
D1xC2X05-AC115-A Medium and High Power	T4	T122ºC	-55ºC to +75ºC
	T5	-	-55ºC to +45ºC
D1xC2X05-AC230-A Medium and High Power	T4	T122ºC	-55ºC to +75ºC
	T5	-	-55ºC to +45ºC
D1xC1X10-DC024-A Low Power	T3	T137ºC	-55ºC to +75ºC
	T4	-	-55ºC to +65ºC
D1xC1X10-AC115-A Low Power	T3	T145ºC	-55ºC to +75ºC
	T4	-	-55ºC to +60ºC
D1xC1X10-AC230-A Low Power	T3	T145ºC	-55ºC to +75ºC
	T4	-	-55ºC to +60ºC
D1xC2X10-DC024-A Medium and High Power	T3	T137ºC	-55ºC to +75ºC
	T4	-	-55ºC to +65ºC
D1xC2X10-AC115-A	T3	T145ºC	-55ºC to +75ºC

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Model	Temperature Class (Gas)	Temperature Class (Dust)	Associated Maximum Ambient Temperature
Medium and High Power	T4	-	-55ºC to +60ºC
D1xC2X10-AC230-A	T3	T145ºC	-55ºC to +75ºC
Medium and High Power	T4	-	-55ºC to +60ºC

Electrical data

Loudspeakers:

Model	Voltage Range	Frequency
D1xL1-V070	70V Line	N/A
D1xL1-R008	10.95V Max. I/P	N/A
D1xL1-R016	15.49V Max. I/P	N/A
D1xL2-V070	70V Line	N/A
D1xL2-R008	14.14V Max. I/P	N/A
D1xL2-R016	20.00V Max. I/P	N/A
D1xL1-V070-A & D1xL2-V070-A	70V Line	N/A
D1xL1-V100-A & D1xL2-V100-A	100V Line	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
D1xL1-R008-A	10.95V Max. I/P	N/A
D1xL1-R016-A	15.49V Max. I/P	N/A
D1xL2-R008-A	14.14V Max. I/P	N/A
D1xL2-R016-A	20.00V Max. I/P	N/A

'-' Horn Type

Sounders:

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

'-' Horn Type

Sounder Beacons:

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

'-' Horn Type

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)

DK/ULD/ExTR19.0008/01

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[17] Specific conditions of use:

- No repair to the flameproof joints are 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 Annex III to UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1.

[20] Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
D1x Combined Sounder Beacon GA Scheduled Drawing	D190-00-301-SC	F	2021-11-29
D1x Sounder GA Scheduled Drawing	D190-00-001-SC	G	2021-11-29
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
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 Range GA	D190-00-201-SC	C	2021-11-29
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/D1xS2 SOUNDER LABELS UKCA APPROVAL	D190-99-001-SC-UK	A	2021-12-10
D1xC1/D1xC2 COMBINED LABELS UKCA APPROVAL	D190-99-301-SC-UK	A	2021-12-10
D1xL1/D1xL2 LOUDSPEAKER LABELS UKCA APPROVAL	D190-99-201-SC-UK	A	2021-12-10
D1xS1 Installation Instructions	D199-00-001-IS-SC-UK	A	2021-12-10

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Title:	Drawing No.:	Rev. Level:	Date:
D1xS2 Installation Instructions	D199-00-101-IS-SC-UK	A	2021-12-10
D1xL1 & D1xL2 Installation Instructions	D199-00-201-IS-SC-UK	A	2021-12-10
D1xC1 & D1xC2 Installation Instructions	D199-00-301-IS-SC-UK	A	2021-12-10