[1] # EU-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

[3] EU-Type Examination Certificate Number: **DEMKO 19 ATEX 2141X Rev. 4**

[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 Demko A/S, notified body number 0539 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in confidential report no. **DK/ULD/ExTR19.0008/04.**

[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 **EN IEC 60079-31:2024**

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

[10] If the sign "**X**" is placed after the certificate number, it indicates that the product is subject to the “Specific Conditions of Use” listed under item 17 of this certificate.

[11] This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.

[12] The marking of the product shall include the following (marking is provided in the Schedule as a part of item 15, if applicable):

II 2 G Ex db IIC T6 …T3 Gb

II 2 D Ex tb IIIC T82°C …T145°C Db

Certification Manager
Thomas Wilson

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 ATEX 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 Directives. 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: 2019-04-30
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Notified Body UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com

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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.

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.

Performance testing

The optical radiation output of the product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is covered in this certificate based on Exception 2 to the scope of EN 60079-28:2015.

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

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Loudspeaker:

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

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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

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.

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[16] Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

[17] Specific conditions of use:

- No repair to the flameproof joints is permitted.

[18] Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

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

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

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