



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX ULD 19.0008X** Page 1 of 4 [Certificate history:](#)  
Issue 0 (2019-04-30)

Status: **Current** Issue No: 1

Date of Issue: 2021-12-01

Applicant: **European Safety Systems Limited**  
Units 18 & 20  
Impress House  
Mansell Rd.  
Acton, London W3 7QH GB  
**United Kingdom**

Equipment: **Loudspeaker, Sounder and Sounder beacon combination, D1xL\* (loudspeaker) D1xS\* (sounder) D1xC\* (sounder beacon)**

Optional accessory:

Type of Protection: **Flameproof "db", Dust ignition protection by enclosure "tb"**

Marking: Ex db IIC T6 ...T3 Gb  
Ex tb IIIC T82°C ...T145°C Db  
-55°C to +75°C  
See Annex to CoC for additional information.

Approved for issue on behalf of the IECEx  
Certification Body:

**Katy A. Holdredge**

Position:

**Senior Staff Engineer**

Signature:  
(for printed version)

Date:

2021-12-01

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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 [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**UL International DEMKO A/S**  
**Borupvang 5A**  
**DK-2750 Ballerup**  
**Denmark**





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Manufacturer: **European Safety Systems Limited**  
Units 18 & 20  
Impress House  
Mansell Rd.  
Acton, London W3 7QH GB  
**United Kingdom**

Additional manufacturing locations:

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 equipment 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

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

This Certificate **does not** indicate compliance with 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 Reports:

[DK/ULD/ExTR19.0008/00](#)

[DK/ULD/ExTR19.0008/01](#)

Quality Assessment Report:

[GB/SIR/QAR06.0020/09](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

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

**Please see Annex for additional information.**

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

No repair to the flameproof joints are permitted.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Issue 1: Updated Sounder PCBA for all models; added new D1xL\*, D1xS2 and D1xC2 models; extended ambient temperature range -55°C to +85°C and all models have been evaluated for Type of Protection "tb".

**Annex:**

[Annex to IECEx ULD 19.0008X Issue 1.pdf](#)



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## TYPE DESIGNATION

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



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## 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.

## PARAMETERS RELATING TO THE SAFETY

### 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



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Model	Voltage Range	Frequency
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



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**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	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

**Sounder Temperature Range:**

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





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## Sounder Beacon Temperature Range:

Model	Temperature Class (Gas)	Temperature (Dust)	Class	Associated Maximum Ambient Temperature
D1xC1X05-DC024-A Low Power	T4	T115°C		-55°C to +75°C
	T5	-		-55°C to +55°C
	T6	-		-55°C to +40°C
D1xC1X05-AC115-A Low Power	T4	T122°C		-55°C to +75°C
	T5	-		-55°C to +45°C
D1xC1X05-AC230-A Low Power	T4	T122°C		-55°C to +75°C
	T5	-		-55°C to +45°C
D1xC2X05-DC024-A Medium and High Power	T4	T115°C		-55°C to +75°C
	T5	-		-55°C to +55°C
	T6	-		-55°C to +40°C
D1xC2X05-AC115-A Medium and High Power	T4	T122°C		-55°C to +75°C
	T5	-		-55°C to +45°C
D1xC2X05-AC230-A Medium and High Power	T4	T122°C		-55°C to +75°C
	T5	-		-55°C to +45°C
D1xC1X10-DC024-A Low Power	T3	T137°C		-55°C to +75°C
	T4	-		-55°C to +65°C
D1xC1X10-AC115-A Low Power	T3	T145°C		-55°C to +75°C
	T4	-		-55°C to +60°C
D1xC1X10-AC230-A Low Power	T3	T145°C		-55°C to +75°C
	T4	-		-55°C to +60°C
D1xC2X10-DC024-A Medium and High Power	T3	T137°C		-55°C to +75°C
	T4	-		-55°C to +65°C
D1xC2X10-AC115-A Medium and High Power	T3	T145°C		-55°C to +75°C
	T4	-		-55°C to +60°C
D1xC2X10-AC230-A Medium and High Power	T3	T145°C		-55°C to +75°C
	T4	-		-55°C to +60°C



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## MARKING

Marking has to be readable and indelible; it has to include the following indications:

### Example of D1xL\*

D1xL1-R008-A		8 Ohm Loudspeaker 15W	
Input:	8 Ohm		
Power:	15W		
Max I/P Voltage:	10.95V		
	ATEX / IECEx		
	II 2G	Ex db IIC T5 Gb Ta -55°C to +75°C	
	II 2D	Ex db IIC T6 Gb Ta -55°C to +60°C	
		Ex tb IIIC T91°C Db Ta -55°C to +75°C	
DEMKO 19 ATEX 2141X IECEX ULD 19.0008X			
IP66			
Year / Serial No. 21/01DG3100001			
2813			
Impress House, Mansell Rd, London UK W3 7QH <a href="http://www.e2s.com">www.e2s.com</a>			

Warnings :
Do not open when an explosive atmosphere is present
Potential Electrostatic hazard-Clean only with a damp cloth
Enclosure Entries: Twin: M20x1.5 / Single: 1/2" NPT
If temperature exceeds 70°C at entry or 80°C at branching point use suitable rated cable and cable glands



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## Example of D1xS\*

D1XS1-DC024-A Alarm Horn

Nominal Voltage: 12 / 24 / 48V dc  
Nominal Current: 221 / 185 / 115mA  
Voltage Range: 11.5 - 54V dc




ATEX / IECEx  
II 2G Ex db IIC T5 Gb Ta -55°C to +75°C  
II 2D Ex db IIC T6 Gb Ta -55°C to +70°C  
Ex tb IIIC T84 Db Ta -55°C to +75°C

DEMKO 19 ATEX 2141X  
IECEX ULD 19.0008X

IP66

Year / Serial No. 21/01DG1200001



Impress House, Mansell Rd, London UK W3 7QH [www.e2s.com](http://www.e2s.com)

Warnings :

Do not open when an explosive atmosphere is present  
Potential Electrostatic hazard-Clean only with a damp cloth  
Enclosure Entries: Twin: M20x1.5 / Single: ½" NPT  
If temperature exceeds 70°C at entry or 80°C at branching point  
use suitable rated cable and cable glands



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## Example of D1xC\*

D1xC1X05-DC024-A  
Combined Alarm Horn/Strobe  
Nominal Voltage: 12 / 24 / 48V dc  
Nominal Current: 221 / 185 / 115mA  
Voltage Range: 11.5 - 54V dc




ATEX / IECEx  
Ex db IIC T4 Gb Ta -55°C to +75°C  
Ex db IIC T5 Gb Ta -55°C to +55°C  
Ex db IIC T6 Gb Ta -55°C to +40°C  
Ex tb IIIC T115°C Db Ta -55°C to +75°C

II 2G  
II 2D

DEMKO 19 ATEX 2141X  
IECEX ULD 19.0008X

IP66

Year / Serial No. 21/01DG5200001



Impress House, Mansell Rd, London UK W3 7QH [www.e2s.com](http://www.e2s.com)

Warnings :

- Do not open when an explosive atmosphere is present
- Potential Electrostatic hazard-Clean only with a damp cloth
- Enclosure Entries: Twin: M20x1.5 / Single: ½" NPT
- If temperature exceeds 70°C at entry or 80°C at branching point use suitable rated cable and cable glands



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## ROUTINE EXAMINATIONS AND TESTS

D1xC\* Units only:

Routine overpressure tests in accordance with IEC 60079-1:Edition 7 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 cemented 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.