

# TYPE EXAMINATION CERTIFICATE



## Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

[3] Type Examination Certificate Number: **DEMKO 14 ATEX 4786493904X Rev. 0**

[4] Equipment: **D2xS1 Sounder and D2xC1 Beacon Sounder**

[5] Manufacturer: **European Safety Systems (E2S) Limited**

[6] Address: **Units 18 & 20, Impress House, Mansell Road, Acton, London. W3 7QH, United Kingdom**

[7] This equipment 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 certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of **Category 3** equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to the European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in confidential report no. **4786493904**

[9] Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to Standards:

**EN 60079-0:2012+A11:2013**

**EN 60079-15:2010**

**EN 60079-31:2009**

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This Type examination certificate relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

[12] The marking of the equipment or protective system shall include the following\*:

II 3 G    Ex nA IIC T4/T2/T1 Gc  
 II 3 D    Ex tc IIIC T90/110°C Dc

\*Refer to product description temperature range below for further details.

### Certification Manager

Jan-Erik Storgaard

This is to certify that the sample(s) of the Equipment described herein ("Certified Equipment") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Equipment Certification Program Requirements. This certificate and test results obtained apply only to the equipment 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 equipment. UL has not established Follow-Up Service or other surveillance of the equipment. The Manufacturer is solely and fully responsible for conformity of all equipment 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:** 2015-03-03

### Certification Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark  
Tel. +45 44 85 65 65, [info.dk@ul.com](mailto:info.dk@ul.com), [www.ul.com](http://www.ul.com)



## Schedule

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[15] Description of Equipment:

D2xS1 (sounder) comprises an aluminium enclosure housing components to generate selectable tones. The enclosure is sealed with o-rings to prevent ingress of dust or water. Up to two M20 threaded entries may be provided for installation of appropriately certified cable entry devices by the end user.

D2xC1X05 (sounder beacon) is the same aluminium housing as the D2xS1, except on one end the beacon assembly is mounted. The lamp is protected by a lens and wire guard. The lens and retaining ring screws are sealed with o-rings to prevent ingress of dust or water. Additional electrical components associated with the operation of the 5 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xC1X10 (sounder beacon) is the same aluminium housing as the D2xS1, except on one end the beacon assembly is mounted. The lamp is protected by a lens and wire guard. The lens and retaining ring screws are sealed with o-rings to prevent ingress of dust or water. Additional electrical components associated with the operation of the 10 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

The optical radiation output of the D2xC1X05 and D2xC1X10 with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 94/9/EC, is not covered in this certificate.

Nomenclature:

Model	Beacon energy (Joules)	Voltage	Suffixes
D2xS1 (Sounder)		115	Up to 4 alpha numeric characters, not associated with equipment certification
		230	
		24	
		48	
D2xC1X (sounder beacon)	05, 10	115	
		230	
		24	
		48	

Temperature range

Equipment Group	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D2xS1	Ex nA IIC	T4 (<135°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T90°C	-40°C ≤ Tamb ≤ +50°C
D2xC1X05	Ex nA IIC	T2 (<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T90°C	-40°C ≤ Tamb ≤ +50°C
D2xC1X10	Ex nA IIC	T2 (<300°C)	-40°C ≤ Tamb ≤ +40°C
	Ex nA IIC	T1 (<450°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T110°C	-40°C ≤ Tamb ≤ +50°C

Electrical Data

Model	Electrical Ratings			
	DC	AC	Hz	Max. Amps, mA
D2xS1DC024	10-30	-	-	313
D2xS1DC048	38-58	-	-	218
D2xS1AC115	-	103.5-126.5	60	91
D2xS1AC230	-	207-253	50	72
D2xC1X05DC024	20-28	-	-	521
D2xC1X05DC048	42-58	-	-	328
D2xC1X05AC115	-	115-125	60	183
D2xC1X05AC230	-	215-250	50	77
D2xC1X10DC024	20-28	-	-	876
D2xC1X10DC048	42-58	-	-	475
D2xC1X10AC115	-	115-125	60	343
D2xC1X10AC230	-	215-250	50	115



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#### Installation instructions

Unused apertures shall be closed with suitably certified; IP66 rated blanking elements, maintaining the type of protection of the equipment. Cable entry temperature may exceed +70°C / the cable branching point may exceed 80°C. Therefore suitable heat resisting cables and cable glands must be used, with a rated service temperature of at least 90°C.

#### Mounting instructions

Not to be mounted with the horn facing upwards. Refer to Manufacturer's Instructions.

#### Routine tests

The xenon lamp assembly shall be routinely dielectrically strength tested. Tests shall be performed as described in EN 60079-15 clause 6.5.1.

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#### Descriptive Documents

Project Report No.: 4786493904 (Hazardous Location Testing)

#### Drawings:

Title:	Drawing No.:	Rev. Level:	Date:
D2xS1 Alarm Horn instructions	D189-00-001-IS-SC	D	2014-10-30
D2xC1X05 / D2xC1X10 Alarm Horn / Strobe instructions	D189-00-501-IS-SC	D	2014-10-30
D2xC1 Sounder/Beacon Product Labels	D189-99-501-SC	C	2014-12-19
D2xS1 UL Scheduled Sounder Product Labels	D189-99-001-SC	C	2014-12-19
D2xC1 Sounder / Beacon General Arrangement drawing.	D189-00-501-SC	E	2015-01-28
D2xS1 Sounder General Arrangement drawing.	D189-00-001-SC	E	2015-01-27
Bare Board Layout D2xS1 Sounder Supply DC.	D189-20-001-SC	B	2014-10-07
Bare Board Layout D2xS1 Sounder Supply AC.	D189-21-051-SC	B	2014-10-07
PCB Bare Board Layout D2xS1 Sounder Control.	D189-22-001-SC	B	2014-10-07
PCB Bare Board Layout D2xC1 Beacon AC.	D189-21-551-SC	B	2014-10-07
PCB Bare Board Layout D2xC1 Beacon DC.	D189-20-501-SC	B	2014-10-07
D2x5J & D2x10J 24V and 48V DC Beacon Circuit Diagram.	D189-25-501-CD-SC	B	2013-07-22
D2x5J & D2x10J 115V and 230V AC Beacon Circuit Diagram.	D189-36-551-CD-SC	C	2014-07-17
D2x 24V/48V DC and 115/230 AC Sounder Control Circuit Diagram.	D189-26-001-CD-SC	B	2014-07-17
D2x 24V & 48V DC Sounder Supply Circuit Diagram.	D189-26-061-CD-SC	C	2014-07-17
D2x 115V & 230V AC Sounder Supply Circuit Diagram.	D189-36-051-CD-SC	B	2014-07-17
D2xS1 24V DC/115V AC/230V AC Sounder Control (BOM)	D189-26-001-CL-SC	D	2014-01-14
D2xS1 48V DC Sounder Control (BOM)	D189-27-001-CL-SC	D	2014-01-14
D2xS1 24V DC Supply Board (BOM)	D189-26-061-CL-SC	E	2014-10-13
D2xS1 48V DC Supply Board (BOM)	D189-27-061-CL-SC	E	2014-10-13
D2xS1 115V AC Supply - Sounder (BOM)	D189-36-051-CL-SC	D	2014-10-13
D2xS1 230V AC Supply - Sounder (BOM)	D189-37-051-CL-SC	D	2014-10-13
D2x5J 24Vdc Beacon PCBA (BOM)	D189-26-501-CL-SC	E	2014-11-19
D2x10J 24Vdc Beacon PCBA (BOM)	D189-26-601-CL-SC	E	2014-11-19
D2x5J 48Vdc Beacon PCBA (BOM)	D189-27-501-CL-SC	E	2014-11-19
D2x10J 48Vdc Beacon PCBA (BOM)	D189-27-601-CL-SC	E	2014-11-19
D2x5J 115V AC Beacon (BOM)	D189-36-551-CL-SC	E	2014-11-19
D2x10J 115V AC Beacon (BOM)	D189-36-651-CL-SC	E	2014-11-19
D2x5J 230V AC Beacon (BOM)	D189-37-551-CL-SC	E	2014-11-19
D2x10J 230V AC Beacon (BOM)	D189-37-651-CL-SC	E	2014-11-19
Prismatic Flash Dome	D24106	A	2009-07-03
BExBG Beacon Glass Dome Guard	D2489	B	2002-01-04
Pressure unit 8 & 16 Ohm	D189-80-001-SC	A	2015-01-27
D2x Beacon board to housing clearance	D189-95-001-SC	A	2014-10-08
E2x Flash tube module Assembly Instructions	D4205	A	2003-10-16



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Special conditions for safe use:

- End user shall adhere to the manufacturer's installation and instruction when performing housekeeping to avoid the potential for hazardous electrostatic charges during cleaning, by using a damp cloth.
- The D2xS1 alarm horn may only be installed with the fixing points of the housing secured to vertical surfaces (walls etc). Orientation on the surface is not restricted.
- The equipment shall only be used in end use with appropriately certified cable entry devices and blanking plugs.

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Essential Health and Safety Requirements

Met by compliance with the standards EN 60079-0:2012+A11:2013, EN 60079-15:2010 and EN 60079-31:2009.

Additional information

The D2xC1 sounder beacon and D2xS1 sounder comply with the requirements for Ingress Protection to IP 66 in accordance with EN 60529: 1991/A1 2000 following thermal conditioning and type tests as required for the type of protection identified in Item 12 above.

