

# TYPE EXAMINATION CERTIFICATE



## Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

- [1] Type Examination Certificate Number: **DEMKO 14 ATEX 4786493904X Rev. 7**
- [2] Product: **D2xS1 (sounder), D2xS2 (sounder), D2xL\* (Loudspeaker), D2xB1 (beacon), D2xC1 (sounder beacon), D2xC2 (sounder beacon), D2xJ1 (junction box).**
- [3] Manufacturer: **European Safety Systems Limited**
- [4] Address: **Impress House, Mansell Road, Acton, London W3 7QH, United Kingdom**
- [5] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [6] UL International Demko A/S 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 Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.
- [7] The examination and test results are recorded in confidential report no. **DK/ULD/ExTR14.0009/07.**
- [8] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN IEC 60079-0:2018**                      **EN IEC 60079-7:2015/A1:2018**  
**EN 60079-31:2014**                        **IEC 60079-31, Edition 3.0 (2022-01)**
- [9] 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 Type examination certificate relates only to the design of the specified product, and not to specific items of product subsequently manufactured.
- [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 3 G Ex ec IIC T6...T1 Gc**



**II 3 D Ex tc IIIC T55...T110°C Dc**

**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:** 2015-03-03

**Re-issued:** 2023-10-18

**Certification Body**

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark  
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## Schedule

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### Description of Product:

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.

D2xS2 (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 three 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.

D2xB1X05 (beacon) comprises an aluminium enclosure housing components to generate visual outputs. The enclosure is sealed with o-rings to prevent ingress of dust and water. Up to 7 M20, ½ NPT or ¾ NPT threaded entries may be provided for installation of appropriately certified cable entry devices by the end user. The lamp is protected by a lens and an optional wire guard. 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.

D2xB1X10 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. 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.

D2xB1LD2 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xB1LD3 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "DC" followed by the voltage.

D2xC2X05 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. 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.

D2xC2X10 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. 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.

D2xC2LD2 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xC2LD3 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "DC" followed by the voltage.

D2xJ1T (Junction Box) is the same aluminium housing as the D2xB1X05 with the junction box lid replacing the lens assembly lid. The enclosure is provided with a 12 Way Terminal Block. The D2xJ1T is approved as an accessory to the D2x product range.

D2xJ1D (Junction Box) is the same aluminium housing as the D2xB1X05 with the junction box lid replacing the lens assembly lid. The enclosure is provided with a DIN rail for installation for up to 12 AKZ 2.5 terminal blocks, and 4 AKE 2.5 Terminal blocks. The D2xJ1D is approved as an accessory to the D2x product range.

D2xB1XH1DC024 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. The electronics are similar to that of D2xB1X05DC024, with the addition of a low voltage sub board to control flash rate timing.

D2xB1XH2DC024 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. The electronics are similar to that of D2xB1X10DC024, with the addition of a low voltage sub board to control flash rate timing.

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D2xC2XH1DC024 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. The model utilizes the D2xB1XH1DC024 beacon coupled with D2xS1DC024.

D2xC2XH2DC024 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. The model utilizes the D2xB1XH2DC024 beacon coupled with D2xS1DC024.

D2xL\* (Loudspeaker) 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. D2xL1 incorporates a 15W driver, D2xL2 incorporates a 25W driver.

#### Nomenclature:

#### Sounder:

Example – D2xS1DC024A1R

Model	Model Voltage (refer to electrical tables below)	Suffix
D2xS1 (low power)	AC115	Up to 4 alpha numeric characters, not associated with equipment certification
	AC230	
	DC024	
	DC048	
D2xS2F and D2xS2H (medium and high power, F and H denote the size of the horn which is a mechanical part outside of the type of protection)	AC230	-A – Normal type.  Up to 4 alpha numeric characters, not associated with equipment certification
	DC024	-A – Normal type. -S – SIL type.  Up to 4 alpha numeric characters, not associated with equipment certification

#### Combined sounder beacon:

Example – D2xC1X05DC024AR/C

Model	Beacon energy (Joules)	Model Voltage (refer to electrical tables below)	Suffix
D2xC1X (low power)	05, 10	AC115	Up to 4 alpha numeric characters, not associated with equipment certification
		AC230	
		DC024	
		DC048	
D2xC2X (medium and high power)	05, 10	DC024	
		DC048	
		AC115	
		AC230	
D2xC2LD2 (LED beacon)	-	DC024	
		DC048	
		AC115	
		AC230	
D2xC2LD3 (LED beacon)	-	DC024	
D2xC2XH1 (xenon beacon)	-	DC024	
D2xC2XH2 (xenon beacon)	-	DC024	

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**Junction Box:**

Example – D2xJ1T

Model	Model Voltage (refer to electrical tables below)
D2xJ1T	54Vdc/230Vac 50/60Hz Max, 10A Max
D2xJ1D	

**Beacon:**

Example – D2xB1X05DC024

Model	Beacon energy (Joules)	Model Voltage (refer to electrical tables below)	Suffix
D2xB1X	05, 10	DC024	Up to 4 alpha numeric characters, not associated with equipment certification
		DC048	
		AC115	
		AC230	
D2xB1LD2 (LED beacon)	-	DC024	
		AC115	
		AC230	
D2xB1LD3 (LED beacon)	-	DC024	
D2xB1XH1 (xenon beacon)	-	DC024	
D2xB1XH2 (xenon beacon)	-	DC024	

**Loudspeaker:**

Example – D2xL1FV100

Model	
D2xL1FV725	15W, 25V to 70V loudspeaker, small horn
D2xL2FV725	25W, loudspeaker, large horn
D2xL2HV725	25W, loudspeaker, extra large horn
D2xL1FV100	15W 100V loudspeaker, small horn
D2xL2FV100	25W 100V loudspeaker, large horn
D2xL2HV100	25W 100V loudspeaker, extra large horn
D2xL1FR008	15W, 8 ohm resistance loudspeaker, small horn
D2xL1FR016	15W, 16 ohm resistance loudspeaker, small horn
D2xL2FR008	25W 8 ohm resistance loudspeaker, large horn
D2xL2FR016	25W 16 ohm resistance loudspeaker, large horn
D2xL2HR008	25W 8 ohm resistance loudspeaker, extra large horn
D2xL2HR016	25W 16 ohm resistance loudspeaker, extra large 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 not covered in this certificate .

Temperature range:

Equipment Group	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D2xS1	Ex ec IIC	T4 (<135°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T90°C	-40°C ≤ Tamb ≤ +50°C
D2xSF2DC024-A D2xSH2DC024-A D2xS2FDC024-S D2xS2HDC024-S	Ex ec IIC	T3	-55°C ≤ Tamb ≤ +75°C
	Ex ec IIC	T4	-55°C ≤ Tamb ≤ +55°C
	Ex tc IIIC	T95°C	-55°C ≤ Tamb ≤ +75°C
		T4	-55°C ≤ Tamb ≤ +75°C
D2xS2FAC230-A D2xS2HAC230-A	Ex ec IIC	T5	-55°C ≤ Tamb ≤ +50°C
	Ex ec IIC	T5	-55°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T93°C	-55°C ≤ Tamb ≤ +75°C
D2xC1X05	Ex ec IIC	T2 (<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T90°C	-40°C ≤ Tamb ≤ +50°C
D2xC1X10	Ex ec IIC	T2 (<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex ec IIC	T1 (<450°C)	-40°C ≤ Tamb ≤ +50°C

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	Ex tc IIIC	T110°C	-40°C ≤ Tamb ≤ +50°C
D2xB1LD2	Ex ec IIC	T4(<135°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T75°C	-40°C ≤ Tamb ≤ +50°C
D2xB1LD3	Ex ec IIC	T4(<135°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T75°C	-40°C ≤ Tamb ≤ +50°C
D2xB1X05DC024	Ex ec IIC	T2(<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T80°C	-40°C ≤ Tamb ≤ +50°C
D2xB1X05DC048 D2xB1X05AC115 D2xB1X05AC230	Ex ec IIC	T3(<200°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T95°C	-40°C ≤ Tamb ≤ +50°C
D2xB1X10DC024	Ex ec IIC	T1(<450°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T105°C	-40°C ≤ Tamb ≤ +50°C
D2xB1X10DC048 D2xB1X10AC115 D2xB1X10AC230	Ex ec IIC	T2(<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T95°C	-40°C ≤ Tamb ≤ +50°C
D2xC2X05DC024	Ex ec IIC	T3(<200°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T75°C	-40°C ≤ Tamb ≤ +50°C
D2xC2X05DC048 D2xC2X05AC115 D2xC2X05AC230	Ex ec IIC	T3(<200°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T95°C	-40°C ≤ Tamb ≤ +50°C
D2xC2X10DC024	Ex ec IIC	T2(<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T85°C	-40°C ≤ Tamb ≤ +50°C
D2xC2X10DC048 D2xC2X10AC115 D2xC2X10AC230	Ex ec IIC	T2(<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T95°C	-40°C ≤ Tamb ≤ +50°C
D2xC2LD2	Ex ec IIC	T4(<135°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T75°C	-40°C ≤ Tamb ≤ +50°C
D2xC2LD3	Ex ec IIC	T4(<135°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T75°C	-40°C ≤ Tamb ≤ +50°C
D2xJ1T	Ex ec IIC	T6(<85°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T55°C	-40°C ≤ Tamb ≤ +50°C
D2xJ1D	Ex ec IIC	T6(<85°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T55°C	-40°C ≤ Tamb ≤ +50°C
D2xB1XH1	Ex ec IIC	T2(<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T80°C	-40°C ≤ Tamb ≤ +50°C
D2xB1XH2	Ex ec IIC	T1 (<450°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T105°C	-40°C ≤ Tamb ≤ +50°C
D2xC2XH1	Ex ec IIC	T3(<200°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T75°C	-40°C ≤ Tamb ≤ +50°C
D2xC2XH2	Ex ec IIC	T2(<300°C)	-40°C ≤ Tamb ≤ +50°C
	Ex tc IIIC	T85°C	-40°C ≤ Tamb ≤ +50°C
D2xL1	Ex ec IIC	T3	-55°C ≤ Tamb ≤ +75°C
	Ex tc IIC	T4	-55°C ≤ Tamb ≤ +50°C
D2xL2	Ex ec IIC	T109°C	-55°C ≤ Tamb ≤ +75°C
	Ex ec IIC	T3	-55°C ≤ Tamb ≤ +75°C
D2xL2	Ex ec IIC	T3	-55°C ≤ Tamb ≤ +75°C
	Ex tc IIC	T119°C	-55°C ≤ Tamb ≤ +75°C

#### Electrical data

Model	Electrical Ratings			
	DC	AC	Hz	Max. Amps, mA, (W)
D2xS1DC024	10-30	-	-	313
D2xS1DC048	38-58	-	-	218
D2xS1AC115	-	103.5-126.5	60	91
D2xS1AC230	-	207-253	50	72
D2xS2FDC024-A D2xS2HDC024-A	11.5-54	-	-	12Vdc – 221mA 24Vdc – 185mA 48Vdc – 115mA
D2xS2FDC024-S D2xS2HDC024-S	20-28	-	-	24Vdc – 185mA
D2xS2FAC230-A D2xS2HAC230-A	-	100-240	50/60	115Vac – 73mA 230Vac – 48mA
D2xC1X05DC024	20-28	-	-	521
D2xC1X05DC048	42-58	-	-	328
D2xC1X05AC115	-	115-125	60	183
D2xC1X05AC230	-	215-250	50	77
D2xC1X10DC024	20-28	-	-	876

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Model	Electrical Ratings			
	DC	AC	Hz	Max. Amps, mA, (W)
D2xC1X10DC048	42-58	-	-	475
D2xC1X10AC115	-	115-125	60	343
D2xC1X10AC230	-	215-250	50	115
D2xB1X05DC024	20-28	-	-	296
D2xB1X05DC048	48	-	-	145
D2xB1X05AC115	-	115-120	50/60	80
D2xB1X05AC230	-	220-230	50/60	30
D2xB1X10DC024	20-28	-	-	609
D2xB1X10DC048	48	-	-	260
D2xB1X10AC115	-	115-120	50/60	185
D2xB1X10AC230	-	220-230	50/60	107
D2xB1LD2DC024	18-54	-	-	346
D2xB1LD2AC115	-	115-120	50/60	102.4
D2xB1LD2AC230	-	220-230	50/60	75
D2xB1LD3DC024	16-33	-	-	528
D2xC2X05DC024	20-28	-	-	296+313
D2xC2X05DC048	48	-	-	145+218
D2xC2X05AC115	-	115-120	50/60	80+91
D2xC2X05AC230	-	220-230	50/60	30+72
D2xC2X10DC024	20-28	-	-	609+313
D2xC2X10DC048	48	-	-	260+218
D2xC2X10AC115	-	115-120	50/60	185+91
D2xC2X10AC230	-	220-230	50/60	107+72
D2xC2LD2DC024	24	-	-	346+313
D2xC2LD2DC048	48	-	-	115+218
D2xC2LD2AC115	-	115-120	50/60	102.4+91
D2xC2LD2AC230	-	220-230	50/60	75+72
D2xC2LD3DC024	16-33	-	-	528+250
D2xJ1T	54 Max	230 Max	50/60	10A Max
D2xJ1D	54 Max	230 Max	50/60	10A Max
D2xB1XH1DC024	20-28	-	-	296
D2xB1XH2DC024	20-28	-	-	609
D2xC2XH1DC024	20-28	-	-	449
D2xC2XH2DC024	20-28	-	-	785
D2xL1FV725	-	25 / 70	signal	15 W
D2xL2FV725	-	25 / 70	signal	25 W
D2xL2HV725	-	25 / 70	signal	25 W
D2xL1FV100	-	100	signal	15 W
D2xL2FV100	-	100	signal	25 W
D2xL2HV100	-	100	signal	25 W
D2xL1FR008	-	10.95V Max	signal	15 W
D2xL1FR016	-	15.49V Max	signal	15 W
D2xL2FR008	-	10.95V Max	signal	25 W
D2xL2FR016	-	15.49V Max	signal	25 W
D2xL2HR008	-	10.95V Max	signal	25 W
D2xL2HR016	-	15.49V Max	signal	25 W

**Routine tests:**

The xenon lamp assembly shall be routinely dielectrically strength tested. Tests shall be performed as described in EN 60079-7 clause 6.1.

All models shall be routinely dielectrically strength tested. The tests shall be performed as described in EN/IEC 60079-7, clause 6.1, at 1200Vac for a minimum of 1 second.

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**Descriptive Documents**

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

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Special Conditions of 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.
- Not to be mounted with the horn facing upwards. Refer to Manufacturer's Instructions.
- The equipment shall only be used in end use with appropriately certified cable entry devices and blanking plugs.

Specific Conditions of Use for D2xB1LD\*\*\*\* and D2xC2LD\*\*\*\*, D2xB1XH1DC024, D2xB1XH2DC024, D2xC2XH1DC024 and D2xC2XH2DC024:

- The equipment shall only be used in an area of at least pollution degree 2, as defined in EN 60664-1.

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Essential Health and Safety Requirements

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

Additional information

The D2xC1 sounder beacon, D2xB1 Beacon, D2xC2 sounder beacon, D2xJ1 Junction Box and D2xS1 sounder has in addition passed the tests for Ingress Protection to IP 66 in accordance with EN60529:1991+A1:2000+A2:2013.



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