[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 2009X Rev. 3**

[4] Product: **D1xB2X - Xenon Beacons, D1xB2LD - LED Beacons, D1xJ2 - Junction Boxes, D2xH1-I/IR - Heat Detectors and D1xH1-A/H/E - Heat Detectors**

[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 the confidential report no. **DK/ULD/ExTR19.0006/03.**

[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 IEC 60079-7:2015/A1:2018**
EN 60079-11:2012 **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 1 G	**Ex ia IIC T6 Ga** (Heat Detectors – D2xH1-I)	**II 1 G**	**Ex ia IIC T4 Ga** (Heat Detectors – D2xH1-IR)
II 2 G	**Ex db IIC T6….T3 Gb** (D1xB2)	**II 2 G**	**Ex db IIC T6….T4 Gb** (D1xJ2, D1xH1-A/H)
II 2 G	**Ex eb IIC T6…T5 Gb** (D1xJ2-E)	**II 2 G**	**Ex db eb IIC T6…T5 Gb** (D1xH1-E)
II 2 D	**Ex tb IIIC T85˚C …T169˚C Db** (D1xB2, D1xJ2, D1xH1, D2xH1)		

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: 2019-05-03
Re-issued: 2024-08-02

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

D1xB2 series are a range of Electronic Strobe Beacons housed in a flameproof / dust protected aluminium enclosure that are intended to be used as visual warning / signalling devices. The enclosure is accessible via the threaded cover which incorporates a glass dome, the glass dome is cemented into the cover. A stainless steel lens guard and non-metallic lens diffuser are optional. Additionally the 5J, 10J and 15J 24VDC models may be fitted with an additional PCB for SIL monitoring. The range is supplemented by a D1xJ2 Junction Box which is based on the D1xB2 Series enclosure, D1xH Heat Detector and D2xH Heat Detector.. The Junction Box and Heat Detector are closed with a single piece moulded threaded cover instead of the beacon lens and may be fitted with optional indicator LED module (except for Ex eb models).

The intrinsically safe heat detector consists of the D2xJ1 enclosure, heat detector and wiring terminals. D2xH1-IR models may also be fitted with optional EOL Series devices including optional LED module.

Nomenclature (Beacons):

Model	Beacon energy (Joules)	Voltage	Suffixes
D1xB2X	05	DC012	Up to 4 alpha numeric characters, not associated with equipment certification
		DC024	
		DC048	
		AC115	
		AC230	
D1xB2X	10	DC024	
		DC048	
		AC115	
		AC230	
D1xB2X	15	DC024	
		DC048	
		AC115	
		AC230	
D1xB2X	21	DC024	
		DC048	
		AC115	
		AC230	
D1xB2LD2 (LED beacon)	-	DC024	
	-	AC115	
	-	AC230	

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Nomenclature (Junction boxes):

Model	Suffix
D1xJ2	T01 = Terminal block
	D01 = Din Rail AKZ
	M01 = Module mounted on internal bracket
	-E = Increased safety

Nomenclature (Heat Detectors):

Model	Suffix
D1xH1-	A = Ex db / Ex tb model
	H = Ex db / Ex tb high temperature model
	E = Ex db eb / Ex tb model
D2xH1-	I = Ex ia model / Ex tb model
	IR = Ex ia, with resistor model / Ex tb with resistor model

Performance testing

The optical radiation output of the beacon products 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.

The optical radiation output of the LED indicator included in this 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 1 to the scope of EN 60079-28:2015.

Temperature ratings (Beacons):

Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xB2X05DC012 D1xB2X05DC024 D1xB2X05DC048	Ex db IIC	T4	-55˚C to +80˚C
		T5	-55˚C to +75˚C
		T6	-55˚C to +60˚C
	Ex tb IIIC	T104˚C	-55˚C to +80˚C
D1xB2X05AC115 D1xB2X05AC230	Ex db IIC	T4	-55˚C to +80˚C
		T5	-55˚C to +50˚C
	Ex tb IIIC	T116˚C	-55˚C to +70˚C
D1xB2X10DC024 D1xB2X10DC048	Ex db IIC	T4	-55˚C to +80˚C
		T5	-55˚C to +45˚C
	Ex tb IIIC	T135˚C	-55˚C to +80˚C
D1xB2X10AC115 D1xB2X10AC230	Ex db IIC	T3	-55˚C to +70˚C
		T4	-55˚C to +65˚C
	Ex tb IIIC	T139˚C	-55˚C to +70˚C
D1xB2X15DC024 D1xB2X15DC048	Ex db IIC	T3	-55˚C to +80˚C
		T4	-55˚C to +65˚C
	Ex tb IIIC	T146˚C	-55˚C to +80˚C
D1xB2X15AC115 D1xB2X15AC230	Ex db IIC	T3	-55˚C to +70˚C
		T4	-55˚C to +65˚C
	Ex tb IIIC	T139˚C	-55˚C to +70˚C
D1xB2X21DC024 D1xB2X21DC048	Ex db IIC	T3	-55˚C to +80˚C
		T4	-55˚C to +45˚C
	Ex tb IIIC	T169˚C	-55˚C to +80˚C

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Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xB2X21AC115 D1xB2X21AC230	Ex db IIC	T3	-55˚C to +60˚C
		T4	-55˚C to +50˚C
	Ex tb IIIC	T141˚C	-55˚C to +60˚C
D1xB2LD2	Ex db IIC	T5	-55˚C to +80˚C
		T6	-55˚C to +70˚C
	Ex tb IIIC	T95˚C	-55˚C to +80˚C

Temperature ratings (Junction Boxes):

Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xJ2***	Ex db IIC	T4	-55˚C to +80˚C
		T5	-55˚C to +70˚C
		T6	-55˚C to +55˚C
	Ex tb IIIC	T106˚C	-55˚C to +80˚C
D1xJ2-E	Ex eb IIC	T5	-55˚C to +80˚C
		T6	-55˚C to +75˚C
	Ex tb IIIC	T85˚C	-55˚C to +80˚C

Temperature ratings (Heat Detectors):

Model	Type of protection	Temperature Class	Associated Maximum Ambient Temperature
D1xH1-A	Ex db IIC	T4	-55˚C to +80˚C
		T5	-55˚C to +70˚C
		T6	-55˚C to +55˚C
	Ex tb IIIC	T106 ˚C	-55˚C to +80˚C
D1xH1-H	Ex db IIC	T4	-55˚C to +125˚C
		T5	-55˚C to +90˚C
		T6	-55˚C to +75˚C
	Ex tb IIIC	T130 ˚C	-55˚C to +125˚C
		T85 ˚C	-55˚C to +80˚C
D1xH1-E	Ex db eb IIC	T5	-55˚C to +80˚C
		T6	-55˚C to +75˚C
		T85˚C	-55˚C to +80˚C
D2xH1-I	Ex ia IIC	T6	–40°C to +50°C
	Ex tb IIIC	T75˚C	–40°C to +50°C
D2xH1-IR	Ex ia IIC	T4	–40°C to +50°C
	Ex tb IIIC	T75˚C	–40°C to +50°C

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Electrical Data (Beacons):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum Current mAmps
D1xB2X05DC012	10-14	-	-	600
D1xB2X05DC024	20-28	-	-	350
D1xB2X05DC048	42-54	-	-	150
D1xB2X05AC115	-	110-120	50/60	200
D1xB2X05AC230	-	220-240	50/60	100
D1xB2X10DC024	20-28	-	-	710
D1xB2X10DC048	42-54	-	-	250
D1xB2X10AC115	-	110-120	50/60	300
D1xB2X10AC230	-	220-240	50/60	180
D1xB2X15DC024	20-28	-	-	920
D1xB2X15DC048	42-54	-	-	360
D1xB2X15AC115	-	110-120	50/60	420
D1xB2X15AC230	-	220-240	50/60	230
D1xB2X21DC024	20-28	-	-	1240
D1xB2X21DC048	42-54	-	-	560
D1xB2X21AC115	-	110-120	50/60	530
D1xB2X21AC230	-	220-240	50/60	270
D1xB2LD2DC024	18-54	-	-	500
D1xB2LD2AC115	-	110-120	50/60	180
D1xB2LD2AC230	-	220-240	50/60	100

Electrical Data (Junction Boxes):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum power Watts	Maximum Current Amps
D1xJ2***	60VDC Max	260VAC Max	50/60	10 Watts	-
D1xJ2-E	60VDC Max	260VAC Max	50/60	-	5A

Electrical Data (Heat Detectors):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum power Watts	Maximum Current Amps
D1xH1-A	125Vdc	125Vac	50/60	10 Watts	-
D1xH1-H				1.25 Watts	-
D1xH1-E	24Vdc	-	--	-	2A
	32Vdc	-	-	-	1A
	-	32Vac	50/60	-	5A

For Intrinsic Safety models D2xH1-I and D2xH1-IR:
Ui = 30V
Ii = 500mA
Pi = 1100mW
Ci = 0
Li = 0

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Routine tests

Routine tests according to EN 60079-1, cl. 16 are not required, as the enclosures have been successfully tested at four times the reference pressure.

The cemented lead seal of the LED modules shall be subjected to a batch overpressure test of at least 363 psi / 25.02 bar for at least 10 s in accordance with Clause 16.6 of IEC 60079-1, 7th Edition.

Heat Detector probe integrity of welds is to be verified by one of the inspection methods in accordance with Clause 16.3 of IEC 60079-1, 7th Edition.

All D1xH1-E shall be routinely dielectrically strength tested between live/neutral and earth/enclosure. The tests shall be performed as described in IEC 60079-7, clause 6.1, at 500V rms for at least 1 minute (or 600V rms for at least 100 ms).

[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:

- The enclosure coating is non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- Repair of the flamepaths is not permitted.

For Ex ia Intrinsically Safe installation of models D2xH1-I and D2xH1-IR:

- 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 equipment does not provide 500V isolation between the intrinsically safe circuit and parts which may be earthed. This shall be considered in the end-use application to ensure the possibility of an earth connection will not compromise intrinsic safety. Refer to EN/IEC 60079-14.
- Avoid impact or friction with the equipment.

[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.