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

Certificate No.: **IECEx ULD 19.0006X**

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Certificate history:
Issue 2 (2024-05-28)
Issue 1 (2019-06-14)
Issue 0 (2019-05-03)

Status: **Current**

Issue No: 3

Date of Issue: 2024-08-02

Applicant: **European Safety Systems Limited**
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

Equipment: **D1xB2X – Xenon Beacons, D1xB2LD – LED Beacons, D1xJ2 – Junction Boxes, D1xH1-A/H/E – Heat Detectors and D2xH1-I/IR - Heat Detectors.**

Optional accessory:

Type of Protection: **Flameproof "db", Increased Safety "eb", Intrinsic Safety "ia", Dust Ignition Protection by Enclosure "tb"**

Marking:

Ex db IIC T6…T3 Gb (D1xB2)

Ex db IIC T6…T4 Gb (D1xH1-A/H, D1xJ2)

Ex eb IIC T6…T5 Gb (D1xJ2-E)

Ex db eb IIC T6…T5 Gb (D1xH1-E)

Ex ia IIC T6 Ga (D2xH1-I)

Ex ia IIC T4 Ga (D2xH1-IR)

Ex tb IIIC T85 ˚C …T169˚C Db (D1xB2, D1xJ2, D1xH1, D2xH1)

-55°C to +125°C (or as specified in the Annex)

For Intrinsic Safety models D2xH1-I and D2xH1-IR: -40°C to +50°C.

Please see Annex for additional Temperature information

Approved for issue on behalf of the IECEx Certification Body: **Lucy Frieders**

Position: **Staff Engineer**

Signature: (for printed version)

Date: (for printed version) 2024-08-02

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Ballerup DK-2750
Denmark

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Impress House
Mansell Road
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Manufacturing locations: **European Safety Systems Limited**
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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 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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/ExTR19.0006/00 DK/ULD/ExTR19.0006/01 DK/ULD/ExTR19.0006/02
DK/ULD/ExTR19.0006/03

Quality Assessment Report:

GB/SIR/QAR06.0020/12

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

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, D1xH1 Heat Detector and D2xH1 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.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 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.

<u>For Ex ia Intrinsically Safe installation of models D2xH1-I and D2xH1-IR:</u>

- 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 IEC 60079-14.
- Avoid impact or friction with the equipment.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1: Added D1xJ2 Junction Box models and updated all existing Beacon Models and new Junction box models to IEC 60079-0, 7th Edition.

Issue 2: Added Increased Safety Protection method for Junction Boxes (D1xJ2-E), Alternate threaded entries for Junction Box enclosure (D1xJ2), Added Heat Detectors D1xH1-A/H/E, D2xH1-I and D2xH1-IR models.

Issue 3: Corrections to typographical errors. Updates to label drawings to correct the typographical errors.

Annex:

Annex to IECEx ULD 19.0006X Issue 3.pdf

TYPE DESIGNATION

Nomenclature (Beacons):

Model	Beacon energy	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	

Nomenclature (Junction boxes):

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

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
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

Electrical Data (Beacons):

Model	Voltage DC	Voltage AC	Freq. Hz	Maximum Current mA
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 A**
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

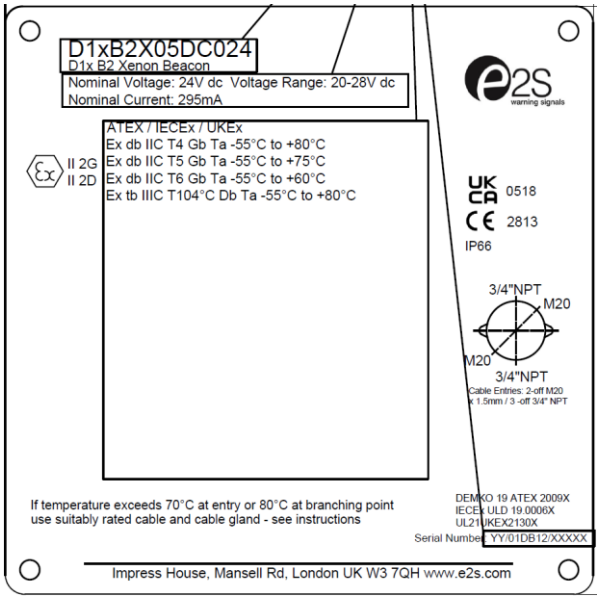
Ci = 0

Li = 0

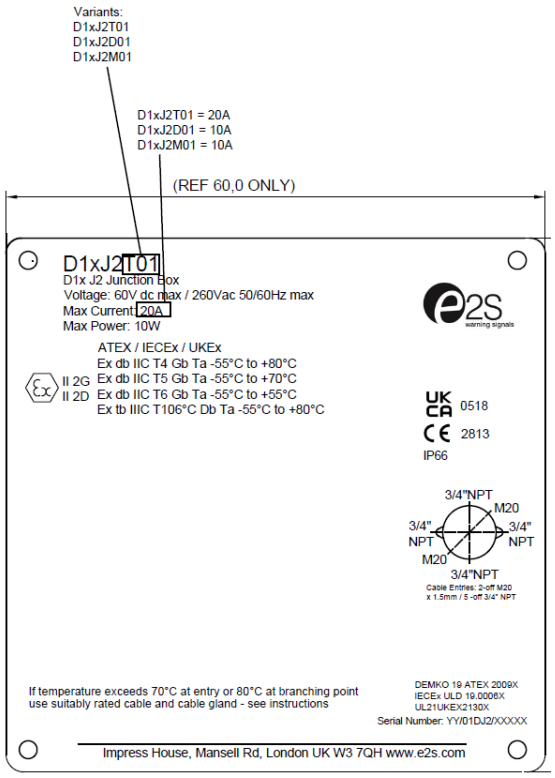
MARKING

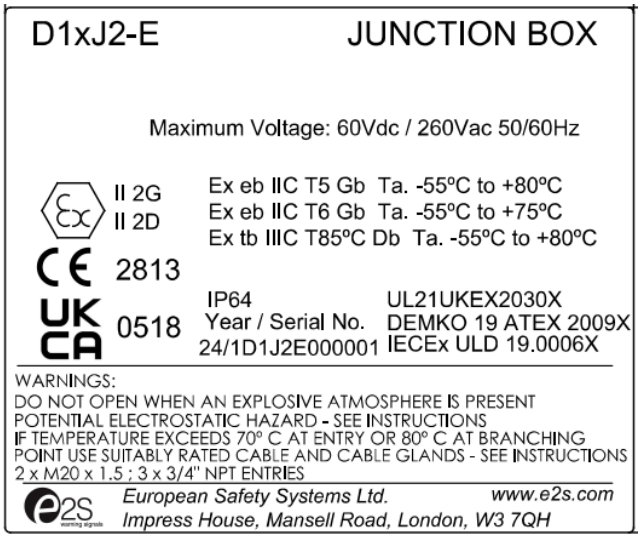
Marking has to be readable and indelible; it has to include the following indications:

D1xB2 (Beacons) example –



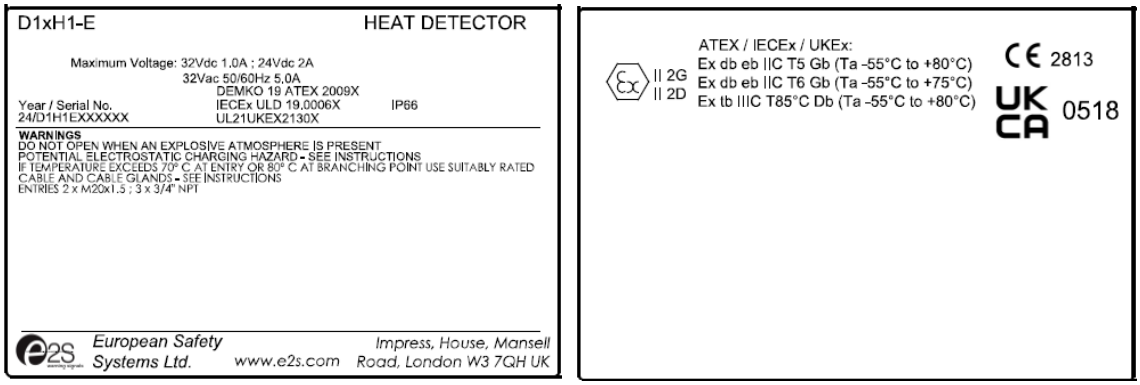
D1xJ2 (Junction Boxes) example –



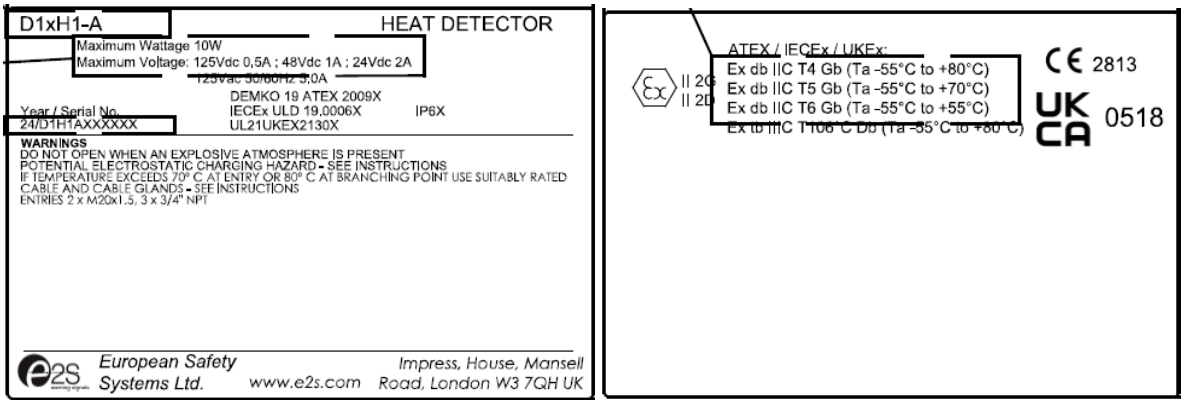


Warning label Markings, example for all Beacons and Junction Boxes –

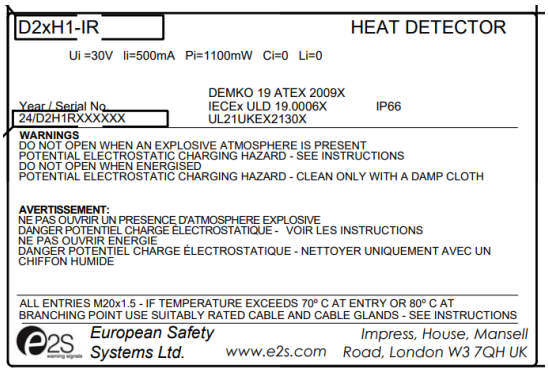
D1xH1-E (Heat Detectors) – example –

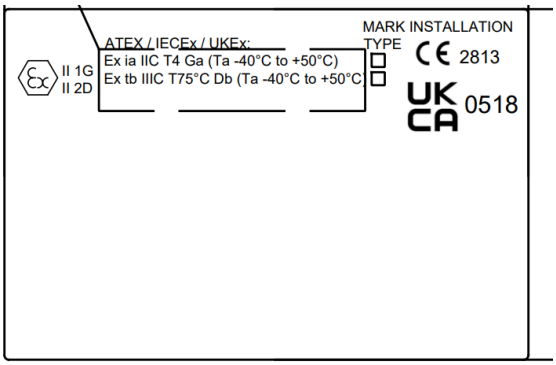


D1xH1-A and D1xH1-H (Heat Detectors) – example –



For models D2xH1-I and D2xH1-IR:





PRODUCT LABEL 1 (MODEL CERT) PRODUCT LABEL 2 (RATINGS LABEL)

ROUTINE EXAMINATIONS AND TESTS

- Routine tests according to IEC 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 are 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).

LIST OF CERTIFIED EQUIPMENT AND/OR COMPONENTS

The following additional previous editions of Standards noted under the “Standards” section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the “Standards” section.

Product	Certificate Number	Standards
Metallic adapters and reducers	IECEx CML 19.0022X Issue 1	IEC 60079-0:2017 (7th) IEC 60079-1:2014 (7th) IEC 60079-7:2015 (Ed 5.0) IEC 60079-31:2013 (2nd)