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INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx UL 15.0003X

Status: Current Issue No: 5

Date of Issue: 2024-08-06

Applicant: European Safety Systems Limited

Impress House Mansell Road Acton

London W3 7QH United Kingdom

Equipment: GNExB range of Signalling Beacons, GNExH1 Heat Detectors and GNExJ2 Junction Box

Optional accessory:

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

Andrew Moffat

Marking: Ex db IIC T6...T4 Gb (GNExB, GNExJ2)

Ex eb IIC T6...T5 Gb (GNExJ2-E)

Ex db eb IIC T6...T4 Gb (GNExH1-E/H)

Ex ia IIC T6 Ga (GNEXH1-I) Ex ia IIC T4 Ga (GNEXH1-IR)

Ex tb IIIC T75°C...T138°C Db (GNExB, GNExJ2, GNExH1)

Please refer to Annex for Temperature Class and Ratings

Approved for issue on behalf of the IECEx

Certification Body:

Position: Senior Project Engineer

Signature:

(for printed version)

Date: 2024-08-06

(for printed version)

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Certificate history: Issue 4 (2024-05-30)

Issue 3 (2021-06-28) Issue 2 (2019-12-16)

Issue 1 (2016-06-30) Issue 0 (2015-11-24)

Certificate issued by:

UL Solutions (US) 333 Pfingsten Road Northbrook IL 60062-2096 United States of America





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Manufacturer: European Safety Systems Limited

Impress House Mansell Road Acton

London W3 7QH United Kingdom

Manufacturing European Safety Systems Limited

locations: Impress House Mansell Road

Acton

London W3 7QH United Kingdom

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

Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

IEC 60079-1:2014 Edition:7.0

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

IEC 60079-11:2011

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:

US/UL/ExTR15.0005/00 US/UL/ExTR15.0005/01 US/UL/ExTR15.0005/02 US/UL/ExTR15.0005/03 US/UL/ExTR15.0005/04 US/UL/ExTR15.0005/05

Quality Assessment Report:

GB/SIR/QAR06.0020/12



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The GNExB1, GNExB2 series are a range of Electronic Strobe or LED Beacons housed in a Flameproof / Dust protected GRP enclosure that are intended to be used as visual warning/ signalling devices. The enclosure is accessible via a threaded cover which incorporates a glass dome, the glass dome is cemented into the cover. The range is supplemented by a GNExJ2 Junction Box and a GNExH1 Heat Detector which are based on the GNExB2 Series enclosure, the junction box and heat detector are closed with a single-piece moulded threaded cover. The intrinsically safe heat detector consists of the GNEx enclosure, heat detector and wiring terminals. GNEXH1-IR models may be fitted with optional EOL Series devices including optional LED module (except Ex eb models).

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The enclosure 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.
- Accessible metal parts are capable of retaining a stored capacitance of 10pF therefore the end user shall take the appropriate action to reduce the risks of ignition associated with discharging this capacitance (applicable to all models except GNExJ2).
- Repair of the flamepaths is not permitted.

For Ex ia Intrinsically Safe models - GNExH1-I and GNExH1-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.
- Accessible metal parts are capable of retaining a stored capacitance of 10pF therefore the end user shall take the appropriate action to reduce the risks of ignition associated with discharging this capacitance.
- 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.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: This variation to report introduces the Large LED Beacon model numbers GNExB2LD2DC024, GNExB2LD2AC115, GNExB2LD2AC230 to the certified range. Correction of typo, temperature rating T135°C in "Code" to be T130°C and thus match information shown in Ratings table contained under General Product Information.

Issue 2: Updates IEC 60079-0 Edition 6 to IEC 60079-0 Edition 7 and updates to marking label and installation instructions.

Issue 3: Updates to Large Beacon (B2) and introduction of 5 Joule models. Updates were made to drawings and documentation pertaining to these changes.

Issue 4: Addition of GNExH1-E, GNExH1-H, GNExH1-I and GNExH1-IR models. Add Increased Safety Protection method for Junction Boxes (GNExJ2-E).

Issue 5: Corrections to typographical errors. Updates to label drawings.

Annex:

Annex to IECEx UL 15.0003X Issue 5.pdf



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TYPE DESIGNATION

Small Strobe Beacons

GNExB1X05DC012, GNExB1X05DC024, GNExB1X05DC048, GNExB1X05AC115, GNExB1X05AC230.

Large Strobe Beacons

GNExB2X05DC012, GNExB2X05DC024, GNExB2X05DC024-SIL, GNExB2X05DC048, GNExB2X05AC115, GNExB2X05AC230. GNExB2X10DC024, GNExB2X10DC024-SIL, GNExB2X10DC048, GNExB2X10AC115, GNExB2X10AC230, GNExB2X15DC024, GNExB2X15DC024-SIL, GNExB2X15DC048, GNExB2X15AC115, GNExB2X15AC230, GNExB2X21DC024, GNExB2X21DC048, GNExB2X21AC115, GNExB2X21AC230.

Large LED Beacons

GNExB2LD2DC024, GNExB2LD2AC115, GNExB2LD2AC230

Junction Box

GNExJ2-E

GNExJ2

Heat Detectors

GNExH1-E

GNExH1-H

GNExH1-I

GNExH1-IR

PARAMETERS RELATING TO THE SAFETY

Ratings:

Small Strobe Beacons -

				IP Rating	Maximum Ambient / Temperature Code						
Type Designation	Description	Rated Voltage Range	Rated Current (mA)		(Dust)	(Gas)					
					70	40	45	55	60	65	70
GNExB1X05DC012	5J Xenon Strobe 12Vdc	10-14Vdc	587	IP66	T110°C	Т6	-	T5	-	-	T4
GNExB1X05DC024	5J Xenon Strobe 24Vdc	20-28Vdc	266	IP66	T110°C	Т6	-	T5	-	-	T4
GNExB1X05DC048	5J Xenon Strobe 48Vdc	42-54Vdc	175	IP66	T110°C	T6	-	T5	-	-	T4
GNExB1X05AC115	5J Xenon Strobe 115Vac, 50/60Hz	110-125Vac, 50/60Hz	121	IP66	T110°C	T6	-	T5	-	-	T4
GNExB1X05AC230	5J Xenon Strobe 230Vac, 50/60Hz	220-240Vac 50/60Hz	88	IP66	T110°C	T6	-	T5	-	-	T4



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Large Strobe Beacons -

					Maximum Ambient / Temperature Code				de		
Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP Rating	(Dust)		(G	(Gas)			
		rango	(113.1)		70	40	45	55	60	65	70
GNExB2X05DC012	5J Xenon Strobe 12Vdc	10-14Vdc	585	IP6X	T89°C	-	-	-	Т6	-	T5
GNExB2X05DC024	5J Xenon Strobe 24Vdc	20-28Vdc	295	IP6X	T89°C	-	-	-	Т6	-	T5
GNExB2X05DC024 -SIL	5J Xenon Strobe 24Vdc	20-28Vdc	295	IP6X	T89°C	-	-	-	Т6	-	T5
GNExB2X05DC048	5J Xenon Strobe 48Vdc	42-54Vdc	145	IP6X	T89°C	-	-	-	Т6	-	T5
GNExB2X05AC115	5J Xenon Strobe 115Vac	110-120Vac 50/60Hz	140	IP6X	T110°C	Т6	-	T5	-	-	T4
GNExB2X05AC230	5J Xenon Strobe 230Vac	220-240Vac 50/60Hz	70	IP6X	T110°C	Т6	-	T5	-	-	T4
GNExB2X10DC024	10J Xenon Strobe 24Vdc	20-28Vdc	605	IP6X	T117°C	-	T5	-	-	-	T4
GNExB2X10DC024 -SIL	10J Xenon Strobe 24Vdc	20-28Vdc	605	IP6X	T117°C	-	T5	-	-	-	T4
GNExB2X10DC048	10J Xenon Strobe 48Vdc	42-54Vdc	230	IP6X	T117°C	-	T5	-	-	-	T4
GNExB2X10AC115	10J Xenon Strobe 115Vac, 50/60Hz	110-120Vac 50/60Hz`	220	IP6X	T122°C	T5	-	-	-	-	T4
GNExB2X10AC230	10J Xenon Strobe 230Vac, 50/60Hz	220-240Vac 50/60Hz	130	IP6X	T122°C	T5	-	-	-	-	T4
GNExB2X15DC024	15J Xenon Strobe 24Vdc	20-28Vdc	835	IP6X	T125°C	-	-	-	-	-	T4
GNExB2X15DC024 -SIL	15J Xenon Strobe 24Vdc	20-28Vdc	835	IP6X	T125°C	-	-	-	-	-	T4
GNExB2X15DC048	15J Xenon Strobe 48Vdc	42-54Vdc	330	IP6X	T125°C	-	-	-	-	-	T4
GNExB2X15AC115	15J Xenon Strobe 115Vac, 50/60Hz	110-120Vac 50/60Hz	310	IP6X	T134°C	-	-	-	-	T4	Т3
GNExB2X15AC230	15J Xenon Strobe 230Vac, 50/60Hz	220-240Vac 50/60Hz-	170	IP6X	T134°C	-	-	-	-	T4	Т3
GNExB2X21DC024	21J Xenon Strobe 24Vdc	20-28Vdc	1130	IP6X	T135°C (*60°C Amb)	-	-	T4	Т3	-	-
GNExB2X21DC048	21J Xenon Strobe 48Vdc	42-54Vdc	530	IP6X	T135°C (*60°C Amb)	-	-	T4	Т3	-	-
GNExB2X21AC115	21J Xenon Strobe 115Vac, 50/60Hz	110-120Vac 50/60Hz	500	IP6X	T138°C	-	-	-	T4	-	Т3
GNExB2X21AC230	21J Xenon Strobe 230Vac, 50/60Hz	220-240Vac 50 Hz	195	IP6X	T138°C	-	-	-	T4	-	Т3



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Large LED Beacons -

					Maximum Ambient / Temperature Code				
Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP Rating	(Dust)	(G	as)		
			(*****)		70	65	70		
GNExB2LD2DC024	LED Beacon, 24Vdc	18-54Vdc	336	IP6X	T85°C	T6	T5		
GNExB2LD2AC115	LED Beacon, 115ac, 50/60Hz	103.5- 126.5Vac 50/60Hz	124	IP6X	T85°C	Т6	T5		
GNExB2LD2AC230	LED Beacon, 230ac, 50/60Hz	207-253Vac 50/60Hz	83	IP6X	T85°C	Т6	T5		

Junction Box -

			Rated Power		Maximum Ambient / Temperature Code					
Type Designation	Description	Rated Voltage Range	Voltage	(max) o r IP Max Rating		(Du	ıst)	(Gas)		
			Current Amps		70	80	60	70		
GNExJ2	GNEx Junction Box (Ex db, Ex tb)	260Vac 50/60Hz, 60Vdc	5W	IP6X	T80°C	-	-	Т6		
GNExJ2-E	GNEx Junction Box (Ex eb, Ex tb)	260Vac 50/60Hz, 60Vdc	5A	IP6X	T75°C	-	-	Т6		

Heat Detector -

_		Rated	.	IP	Maximum Ambient / Temperature Code						
Type Designation	Description	Voltage Range	Rated Current	Ratin g	(Dust)		(Gas			;)	
					70	105	60	70	75	90	105
GNExH1-l	Heat Detector – No EOL or Series Devices (Ex tb)	30Vac 50/60Hz , 30Vdc	0.5A, 1.1W	· I IPhx I		-	-	-	-	-	-
	Heat Detector – No EOL or Series Devices (Ex ia)	See belo	w for IS parameters		-	-	-	Т6	-	-	-
GNExH1-IR	Heat Detector – Optional EOL, Series devices (Ex tb)	30Vac 50/60Hz , 30Vdc	0.5A, 1.1W	IP6X	T80°C	-	-	-	-	-	-
GNEXTI-IR	Heat Detector – Optional EOL, Series devices (Ex ia)	See below for IS parameters		-	-	-	T4	-	-	-	
GNExH1-E	Heat Detector (Ex db eb, Ex tb)	24Vdc 32Vdc, 32Vac 50/60Hz	2A 1A 5A	IP64	T75°C	-	-	Т6	-	-	-
GNExH1-H	Heat Detector (Ex db eb, Ex tb)	24Vdc 32Vdc, 32Vac 50/60Hz	2A 1A 5A	IP64	T75°C	T110°C	-	-	Т6	T5	T4



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Ex ia Product - Heat Detectors
For Intrinsic Safety models GNExH1-I and GNExH1-IR:

Ui=30V Ii=500mA Pi=1100mW Ci=0 Li=0

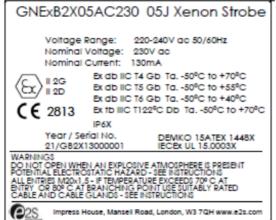
Ambient temperature range: -50°C to +70°C.

MARKING

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

Examples of model labels -

For Models GNExB:







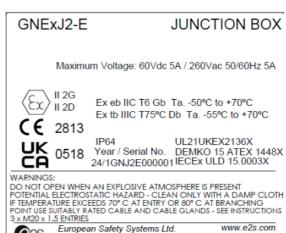


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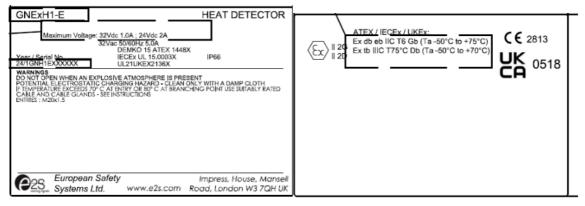
For model GNExJ2 and GNExJ2-E:





Impress House, Mansell Road, London, W3 7QH

For models GNExH1-E and GNExH1-H:



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

Example shown is a GNExH1-E; variants listed below:

FIELD 1 MODEL	FIELD 2 SERIAL NO. FORMAT	FIELD 3 RATINGS	FIELD 4 POWER / VOLTAGE
GNExH1-E	YY/1GNH1EXXXXXX	Ex db eb IIC T6 Gb (Ta -50°C to +70°C) Ex tb IIIC T75°C Db ((Ta -50°C to +70°C)	32Vdc 1A ; 24Vdc 2A 32Vac 50/60Hz 5.0A
GNExH1-H	YY/1GNH1HXXXXXX	Ex db eb IIC T4 Gb (Ta -50°C to +105°C) Ex db eb IIC T5 Gb (Ta -50°C to +90°C)	32Vdc 1A ; 24Vdc 2A 32Vac 50/60Hz 5.0A

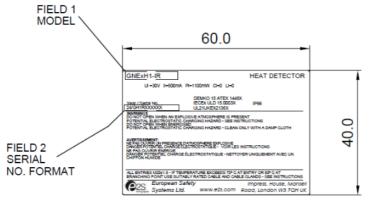
Ex tb IIIC T75°C Db ((Ta -50°C to +70°C) Ex tb IIIC T110°C Db ((Ta -50°C to +105°C)



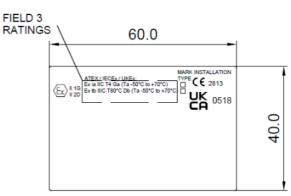
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For models GNExH1-I and GNExH1-IR:



PRODUCT LABEL 1 (MODEL CERT)



PRODUCT LABEL 2 (RATINGS LABEL)

Example shown is a GNExH1-IR; variants listed below:

FIELD 1 FIELD 2 FIELD 3 MODEL SERIAL NO. FORMAT RATINGS

GNExH1-I YY/GH1IXXXXXX Ex ia IIC T6 Ga (Ta -50°C to +70°C) Ex tb IIIC T80°C Db (Ta -50°C to +70°C)

GNExH1-IR YY/GH1IRXXXXXXX Ex ia IIC T4 Ga (Ta -50°C to +70°C)

Ex tb IIIC T80°C Db (Ta -50°C to +70°C)

ROUTINE EXAMINATIONS AND TESTS

Each GNExB1 enclosure shall be subjected to a routine overpressure test of at least 17.8 bar for at least 10 s as required by clause 16.1 of IEC 60079-1, 7th Edition. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection.

Each GNExB2 and GNExJ2 enclosure shall be subjected to a routine overpressure test of at least 18.3 bar for at least 10 s as required by clause 16.1 of IEC 60079-1, 7th Edition. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection.

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 GNExH1-E shall be routinely dielectrically strength tested between live/neutral and earth/enclosure. The tests shall be performed as described in IEC 60079-7, Edition 5.1, clause 6.1, at 500V rms for at least 1 minute (or 600V rms for at least 100 ms).



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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)