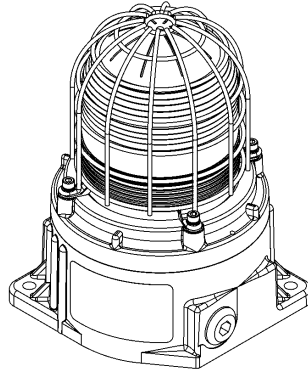


# INSTRUCTION MANUAL

## GNExB2X05, GNExB2X10, GNExB2X15 & GNExB2X21

### Flameproof Xenon Beacons

#### For use in Flammable Gas and Dust Atmospheres



**GNExB2X05  
GNExB2X10  
GNExB2X15  
GNExB2X21**

### 1) Product Table

Standard	Model	Nom. Voltage	Voltage Range	Nom. Operating Current*	Max Current
ATEX / IECEX / UKEX NEC / CEC	GNExB2X05DC012	12Vdc	12-14Vdc	585mA	600mA
	GNExB2X05DC024	24Vdc	20-28Vdc	295mA	350mA
	GNExB2X05DC048	48Vdc	42-54Vdc	145mA	150mA
	GNExB2X05AC115	115Vac	110-120Vac 50/60Hz	140mA	200mA
	GNExB2X05AC230	230Vac	220-240Vac 50/60Hz	70mA	100mA
	GNExB2X10DC024	24Vdc	20-28Vdc	605mA	710mA
	GNExB2X10DC048	48Vdc	42-54Vdc	230mA	250mA
	GNExB2X10AC115	115Vac	110-120Vac 50/60Hz	220mA	300mA
	GNExB2X10AC230	230Vac	220-240Vac 50/60Hz	130mA	180mA
ATEX / IECEX / UKEX	GNExB2X15DC024	24Vdc	20-28Vdc	835mA	920mA
	GNExB2X15DC048	48Vdc	42-54Vdc	330mA	360mA
	GNExB2X15AC115	115Vac	110-120Vac 50/60Hz	310mA	420mA
	GNExB2X15AC230	230Vac	220-240Vac 50/60Hz	170mA	230mA
	GNExB2X21DC024	24Vdc	20-28Vdc	1130mA	1240mA
	GNExB2X21DC048	48Vdc	42-54Vdc	530mA	560mA
	GNExB2X21AC115	115Vac	110-120Vac 50/60Hz	500mA	530mA
	GNExB2X21AC230	230Vac	220-240Vac 50/60Hz	195mA	270mA

\*Rate at 1Hz

The table shows the input current taken by the various beacons.  
Nominal current at nominal voltage and 1Hz flash rate.  
Max. rated current at worst case supply voltage and flash rate.

Table 1: Electrical Ratings.

Ensure the system power supply is capable of providing the maximum current required for all beacons. Review associated cable size, length and quantity of beacons on each circuit.


## 2) Warnings



- POTENTIAL ELECTROSTATIC CHARGING HAZARD – CLEAN ONLY WITH A DAMP CLOTH.
- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT.
- ALL ENTRIES M20 X 1.5MM.
- USE SUITABLE RATED CABLES AND CABLE GLANDS IF TEMPERATURE EXCEEDS AS PER STANDARDS INDICATIONS BELOW.  
FOR ATEX / IECEx / UKEX STANDARDS:  
70°C AT ENTRY OR 80°C AT BRANCHING POINT.  
FOR NEC / CEC STANDARDS:  
60°C AT ENTRY OR 60°C AT BRANCHING POINT.

GNExB2: X21DC024 X21DC048	Ex db IIC T3 Gb Ta -50°C to +60°C Ex db IIC T4 Gb Ta -50°C to +55°C Ex tb IIIC T135°C Db Ta -50°C to +60°C
GNExB2: X21AC115 X21AC230	Ex db IIC T3 Gb Ta -50°C to +70°C Ex db IIC T4 Gb Ta -50°C to +60°C Ex tb IIIC T138°C Db Ta -50°C to +70°C

Certificate No. DEMKO 15ATEX1448X  
IECEX UL15.0003X  
UL21UKEX2136X

ATEX Mark, Equipment Group and Category:  II 2G  
II 2D

CE Marking and Notified Body No.  2813

UKCA Marking and Notified Body No.  0518

## 3) Marking & Rating Information

All units have a rating label, which carries the following important information:

- Unit Model.
- Voltage Range
- Nominal Voltage
- Max. Current

See Table 1 for electrical ratings of each Unit Model.

### 3.1. ATEX / IECEx / UKEX Ratings

Standards	
EN IEC 60079-0:2018 / IEC60079-0:2017 (Ed 7): Explosive Atmospheres - Equipment. General Requirements EN60079-1:2014 / IEC60079-1:2014 (Ed 7): Explosive Atmospheres - Equipment Protection by Flameproof Enclosures "d" BS EN 60079-31:2014 / IEC 60079-31:2013 (Ed 2): Explosive Atmospheres - Equipment Dust Ignition Protection by Enclosure "t"	
Ratings	
GNExB2: X05DC012 X05DC024 X05DC048	Ex db IIC T5 Gb Ta -50°C to +70°C Ex db IIC T6 Gb Ta -50°C to +60°C Ex tb IIIC T89°C Db Ta -50°C to +70°C
GNExB2: X05AC115 X05AC230	Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +55°C Ex db IIC T6 Gb Ta -50°C to +40°C Ex tb IIIC T110°C Db Ta -50°C to +70°C
GNExB2: X10DC024 X10DC048	Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +45°C Ex tb IIIC T117°C Db Ta -50°C to +70°C
GNExB2: X10AC115 X10AC230	Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +40°C Ex tb IIIC T122°C Db Ta -50°C to +70°C
GNExB2: X15DC024 X15DC048	Ex db IIC T4 Gb Ta -50°C to +70°C Ex tb IIIC T125°C Db Ta -55°C to +70°C
GNExB2: X15AC115 X15AC230	Ex db IIC T3 Gb Ta -50°C to +70°C Ex db IIC T4 Gb Ta -50°C to +65°C Ex tb IIIC T134°C Db Ta -55°C to +70°C

### 3.2. NEC / CEC Ratings



All models are approved for use as Visual Signal Device for use as General Signalling:

UL1638A & CSA C22.2 No 205-17

### NEC Class / Zone Ratings US Codes

Standards	
UL 60079-0 (Ed. 7) 04/15/2020 Explosive Atmospheres - part 0: Equipment - General Requirements UL 60079-1 (Ed. 7) 2015 Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures 'd'	
Ratings	
GNExB2: X05DC012 X05DC024* X05DC048	Class I Zone 1 AEx db IIC T5 Gb Ta -50°C to +70°C Class I Zone 1 AEx db IIC T6 Gb Ta -50°C to +60°C
GNExB2: X05AC115 X05AC230	Class I Zone 1 AEx db IIC T4 Gb Ta -50°C to +70°C Class I Zone 1 AEx db IIC T5 Gb Ta -50°C to +55°C Class I Zone 1 AEx db IIC T6 Gb Ta -50°C to +40°C
GNExB2: X10DC024* X10DC048	Class I Zone 1 AEx db IIC T4 Gb Ta -50°C to +70°C Class I Zone 1 AEx db IIC T5 Gb Ta -50°C to +45°C
GNExB2: X10AC115 X10AC230	Class I Zone 1 AEx db IIC T4 Gb Ta -50°C to +70°C Class I Zone 1 AEx db IIC T5 Gb Ta -50°C to +40°C
*SIL Suitable	

Installation must be carried out in compliance with the National Electric Code.

**CEC Class / Zone Ratings Canada**

Standards	
CAN/CSA C22.2 No. 60079-0 (Ed. 4) 02/2019 Explosive Atmospheres - Part 0: Equipment - General Requirements	
CAN/CSA C22.2 No. 60079-1 (Ed. 3) 2016 Electrical Apparatus for Explosive Gas Atmospheres - Part 1: Flameproof Enclosures 'd'	
Rating	
GNExB2: X05DC012 X05DC024 X05DC048	Ex db IIC T5 Gb Ta -50°C to +70°C Ex db IIC T6 Gb Ta -50°C to +60°C
GNExB2: X05AC115 X05AC230	Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +55°C Ex db IIC T6 Gb Ta -50°C to +40°C
GNExB2: X10DC024 X10DC048	Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +45°C
GNExB2: X10AC115 X10AC230	Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +40°C

Installation must be carried out in compliance with the Canadian Electric Code.

**NEC & CEC Class / Division Ratings for US / Canada, USL CNL**

Standards	
GNExB2X Xenon beacons	UL1638A (Ed. 1) 2016 Standard for Visual Signal Appliances for General Signalling Use CSA C22.2 No. 205-17 (Ed. 3) 2017 Signal Equipment
Ratings	
GNExB2: X05DC012 X05DC024 X05DC048	Class I Div 2 Group ABCD T5 Ta -50°C to +70°C Class I Div 2 Group ABCD T6 Ta -50°C to +60°C
GNExB2: X05AC115 X05AC230	Class I Div 2 Group ABCD T4 Ta -50°C to +70°C Class I Div 2 Group ABCD T5 Ta -50°C to +55°C Class I Div 2 Group ABCD T6 Ta -50°C to +40°C
GNExB2: X10DC024 X10DC048	Class I Div 2 Group ABCD T4 Ta -50°C to +70°C Class I Div 2 Group ABCD T5 Ta -50°C to +45°C
GNExB2: X10AC115 X10AC230	Class I Div 2 Group ABCD T4 Ta -50°C to +70°C Class I Div 2 Group ABCD T5 Ta -50°C to +40°C

The certification approval has validated continuous use up to 38°C ambient and are for transient use up to 70°C ambient.

Installation must be carried out in compliance with the National Electric Code / Canadian Electric Code.

**4) Zones, Gas Group, Category and Temperature Classification**

The units can be installed in locations with the following conditions:

Area Classification	
Zone 1	Explosive gas air mixture likely to occur in normal operation.
Zone 2	Explosive gas air mixture not likely to occur in normal operation, and if it does, it will only exist for a short time.
Zone 21 (ATEX / IECEx / UKEX only)	Explosive dust air mixture likely to occur in normal operation.
Zone 22 (ATEX / IECEx / UKEX only)	Explosive dust air mixture not likely to occur in normal operation, and if it does, it will only exist for a short time.
Gas Groupings	
Group IIA	Propane
Group IIB	Ethylene
Group IIC	Hydrogen and Acetylene
Temperature Classification for Gas Applications	
T1	450°C
T2	300°C
T3	200°C (GNExB2X15AC & GNExB2X21AC up to 70°C ambient; GNExB2X21DC up to 60°C ambient)
T4	135°C (GNExB2X05AC, GNExB2X10DC, GNExB2X10AC & GNExB2X15DC up to 70°C ambient; GNExB2X15AC up to 65°C ambient; GNExB2X21DC up to 55°C ambient; GNExB2X21AC up to 60°C ambient)
T5	100°C (GNExB2X05DC up to 70°C ambient; GNExB2X05AC up to 55°C ambient; GNExB2X10DC up to 45°C ambient; GNExB2X10AC up to 40°C ambient)
T6	85°C ATEX / IECEx / UKEX: GNExB2X05DC up to 60°C ambient, GNExB2X05AC up to 40°C ambient NEC / CEC: Up to 65°C ambient
Dust Groupings (ATEX / IECEx / UKEX only)	
Group IIIA	Combustible Flyings
Group IIIB	Non-conductive Dust
Group IIIC	Conductive Dust
Maximum Surface Temperature for Dust Applications (ATEX / IECEx / UKEX only)	
GNExB2X05DC	89°C
GNExB2X05AC	110°C
GNExB2X10DC	117°C
GNExB2X10AC	122°C
GNExB2X15DC	125 °C
GNExB2X15AC	134°C
GNExB2X21DC	135°C
GNExB2X21AC	138°C

Equipment Category
2G / 2D
Ambient Temperature Range
-50°C to +70°C
IP Rating
IP6X to EN/IEC60079-0 IP66 to EN60529

## 5) Special Conditions for Safe Use

Repair of the flame path / cemented joints is not permitted.

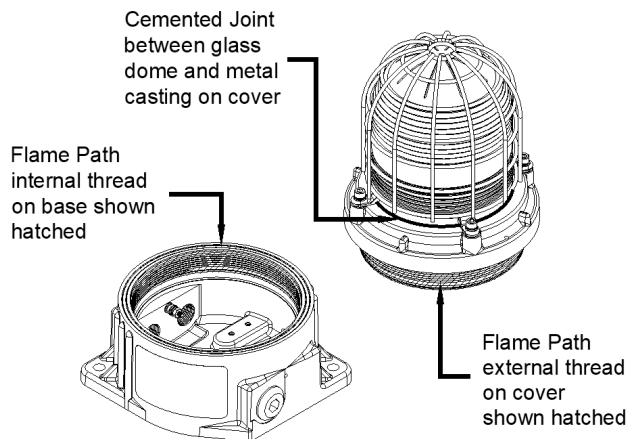


Figure 1: Flame Path.

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 that might cause a build-up of electrostatic charges on non-conducting surfaces.

The stainless steel beacon guard is not earthed and may generate an ignition-capable level of electrostatic charges. It has a capacitance of 10pF according to EN/IEC60079-0, clause 7.5.

All entries must be fitted with a suitable seal at the interface with enclosure.

## 6) Product Mounting and Access

### 6.1. Location and Mounting

The location of the beacons should be made with due regard to the area over which the warning signal must be visible. They should only be fixed to services that can carry the weight of the unit.

The beacons should be securely bolted to a suitable surface using the 9.4mm diameter bolt holes in the base of the unit (see figure 2).

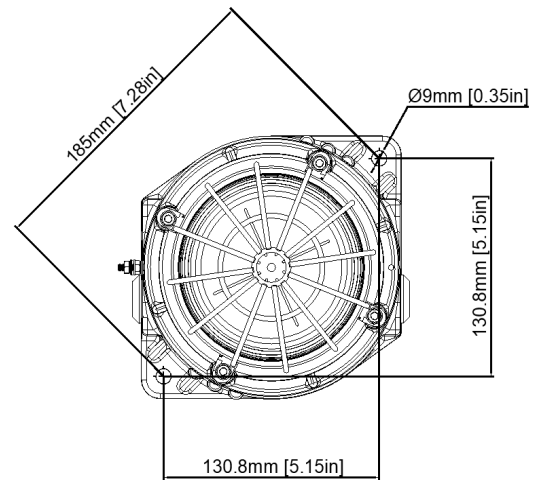


Figure 2: Fixing Location for B2 Beacon.

### 6.2. Access to the Flameproof Enclosure

In order to connect the electrical supply cables to the beacon it is necessary to remove the flameproof cover to gain access to the flameproof chamber. To access the Ex d chamber, loosen the M4 grub screw on the beacon cover. Open the enclosure by turning the beacon cover counterclockwise and remove the cover, taking extreme care not to damage the flameproof threads in the process (see figure 3).

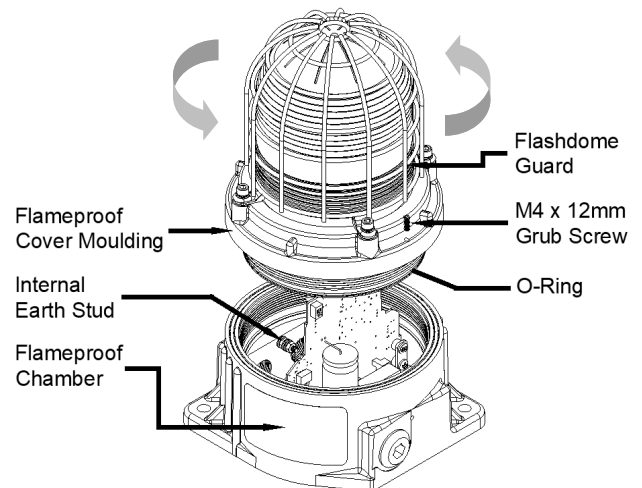


Figure 3: Accessing the Explosion Proof Enclosure.

On completion of the installation the flameproof threaded joint should be inspected to ensure that they are clean and that they have not been damaged during installation.

Flameproof threaded joints are not intended to be repaired.

Ensure that the 'O' ring seal is in place and undamaged.

When fitting the flameproof cover ensure the thread is engaged correctly. Fully tighten the cover all the way, ensure no gap is visible between the cover and base of the beacon enclosure. Tighten the M4 grub screw.

## 7) Installation Requirements

### 7.1. Installation Standards Compliance



Attention: Disconnect from power source before installation or service to prevent electric shock.

The beacons must only be installed by suitably qualified personnel in accordance with the latest issues of the relevant standards.

#### ATEX / IECEx & UKEx installation standards

EN60079-14 / IEC60079-14: Explosive atmospheres - Electrical installations design, selection and erection.

EN60079-10-1 / IEC60079-10-1: Explosive atmospheres - Classification of areas. Explosive gas atmospheres.

EN60079-10-2 / IEC60079-10-2: Explosive atmospheres - Classification of areas. Explosive dust atmospheres.

The installation of the units must also be in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer who has the necessary training.

#### NEC / CEC Installation Standards

#### Cautions



Attention: Installation must be carried out by an electrician in compliance with the National Electrical Code, NFPA 70 or CSA 22.1 Canadian Electrical Code, Part I, Safety Standard for Electrical Installations, Section 32. / L'installation doit exclusivement être réalisée par du personnel qualifié, conformément au code national d'électricité américain, NFPA 70 ou CSA 22.1 Code canadien de l'électricité, première partie, norme de sécurité relative aux installations électriques, Section 32.



Attention: Disconnect from power source before installation or service to prevent electric shock / Débranchez-le de la source d'alimentation avant l'installation ou l'entretien pour éviter tout choc électrique.

The installation of the units must also be in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer who has the necessary training.

### 7.2. Cable Selection and Connections

When selecting the cable size, consideration must be given to the input current that each unit draws (see table 1), the number of beacons on the line and the length of the cable runs. The cable size selected must have the necessary capacity to provide the input current to all of the beacons connected to the line.

Electrical connections are to be made into the terminal blocks on the PCBA, using solid wire 0.5-4mm<sup>2</sup> / AWG 20-12 or stranded wire, sizes 0.5-2.5mm<sup>2</sup> / AWG 24-14. Wire insulation needs to be stripped 8mm. Wires may be fitted securely with crimped ferrules.

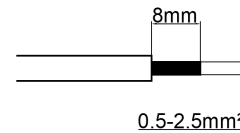


Figure 4: Wire Preparation.

Terminal screws need to be tightened down with a tightening torque of 0.45 Nm / 5 Lb-in. A 5-way terminal block is provided on the AC Beacon: 2-off Live, 2-off Neutral and 1-off Earth terminals in total. A 4-way terminal block is provided on the DC Beacon: 2-off +ve and 2-off -ve terminals.

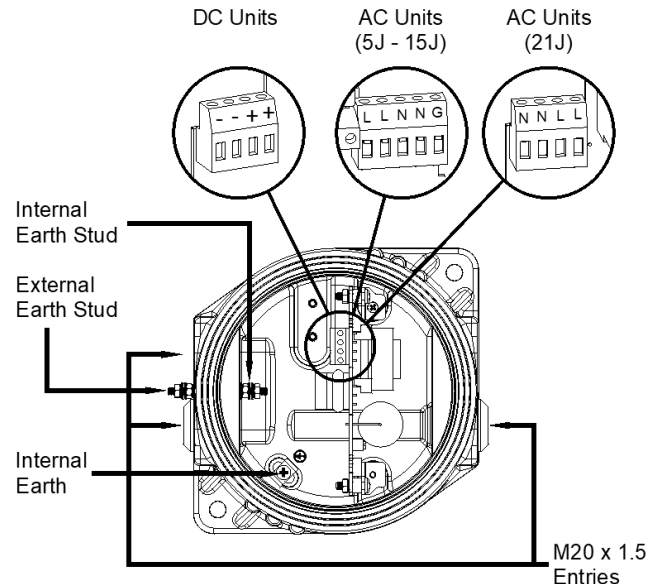


Figure 5: GNExB2 Entries and Terminal Block Location.

When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm<sup>2</sup>.

#### **Earthing**

Please note that for AC supply voltage product versions the Earth terminal on the PCBA does not provide an earth connection to the product enclosure. The enclosure must be independently earthed using either the external or internal earth fixing point, (see fig 5 and notes below).

Internal earthing connections should be made to the Internal Earth terminal in the base of the housing using a ring crimp terminal to secure the earth conductor under the earth clamp. The earth conductor should be at least equal in size and rating to the incoming power conductors.

External earthing connections should be made to the M4 earth stud, using a ring crimp terminal to secure the earth conductor to the earth stud. The external earth conductor should be at least 4mm<sup>2</sup> in size.

### 7.3. Cable Glands, Blanking Elements & Adapters

Follow the minimum temperature ratings of cables and cable glands according to the approvals applied.

#### ATEX / IECEx & UKEx Requirements

The cable entry temperature may exceed +70°C or the cable branching point temperature may exceed 80°C at high ambient temperatures and therefore suitable heat resisting cables and cable glands must be used, rated as follows:

Model GNExB2	Max Ambient Temperature (°C)											
	15	20	25	30	35	40	45	50	55	60	65	70
X05DC										75	80	85
X05AC					73	78	83	88	93	98	103	108
X10DC					70	75	80	85	90	95	100	105
X10AC					74	79	84	89	94	99	104	109
X15DC			74	79	84	89	94	99	104	109	114	119
X15AC			74	79	84	89	94	99	104	109	114	119
X21DC	95	100	105	110	115	120	125	130	135	140		
X21AC			74	79	84	89	94	99	104	109	114	119

Table 2: ATEX / IECEx & UKEx Min. Ratings of Cables & Cable Glands.

#### NEC / CEC Requirements Only

For high ambient temperatures the cable entry temperature may exceed 60°C or the cable branching point temperature may exceed 60°C and therefore suitable heat resisting cables and cable glands must be used, with a rated service temperature at least as stated below:

Model GNExB2	Max Ambient Temperature (°C)											
	15	20	25	30	35	40	45	50	55	60	65	70
X05DC								65	70	75	80	85
X05AC			63	68	73	78	83	88	93	98	103	108
X10DC				65	70	75	80	85	90	95	100	105
X10AC			64	69	74	79	84	89	94	99	104	109

Table 3: NEC / CEC Min. Ratings of Cables & Cable Glands.

#### **Cable Glands & Blanking Plugs**

Appropriate cable glands to be customer supplied.

#### ATEX / IECEx & UKEx Requirements Only

The cable gland entries have an M20 x 1.5 entry thread. Only suitably rated and ATEX / IECEx & UKEx certified cable glands which must be suitable for the type of cable being used and also meet the requirements of the current Ex 'd' flameproof installation standards EN 60079-14 / IEC60079-14.

If the installation is made using conduit, openings must have a sealing fitting connected as close as practical to the wall of the enclosure, but in no case more than the size of the conduit or 50mm, whichever is the lesser.

When only one cable entry is used the other entries must be closed with suitably rated and ATEX / IECEx & UKEx certified blanking plugs.

#### NEC / CEC Requirements Only

The cable entries have an M20 x 1.5 – 6H entry thread. If the installation is made using cable glands, only suitably rated and certified cable glands must be used. They must be suitable for the type of cable being used and also meet the requirements of the current NEC / CEC installation standards.

If the installation is made using conduit, openings must have a sealing fitting connected as close as practical to the wall of the enclosure, but in no case more than the size of the conduit or 50mm, whichever is the lesser.

For use in Class I Division II locations, in order to maintain the db type protection, flameproof conduit seals and/or cable glands must be used.

Any unused cable entries must be closed with suitably rated and certified blanking plugs.

#### **Ingress Protection**

Follow instructions according to the approvals applied.

#### ATEX / IECEx & UKEx Requirements Only

If a high IP (Ingress Protection) rating is required then a suitable sealing washer must be fitted under the cable glands or blanking plugs. A minimum ingress protection rating of IP6X must be maintained for installations in explosive dust atmospheres.

#### NEC / CEC Requirements Only

If a high IP (Ingress Protection) rating is required then a suitable sealing washer must be fitted under the cable glands or blanking plugs. A minimum ingress protection rating of IP6X must be maintained for installations in explosive dust atmospheres.

#### **Adapters**

The GNEx Beacon Range can be supplied with the following types of adapters:

- M20 to 1/2" NPT
- M20 to 3/4" NPT
- M20 to M25

It is important to note that stopping plugs cannot be fitted onto adapters, only directly onto the M20 entries.

Any other adapters used must be suitably rated as per the applicable standards.

## 8) Flash Pattern Settings



Warning – high-intensity light source. Avoid looking directly at the light source for extended periods of time.

The GNExB2 beacon can produce different flash patterns as shown in Table 4. The flash patterns are selected by operation of the flash setting DIP switch on the PCB, Fig 6.

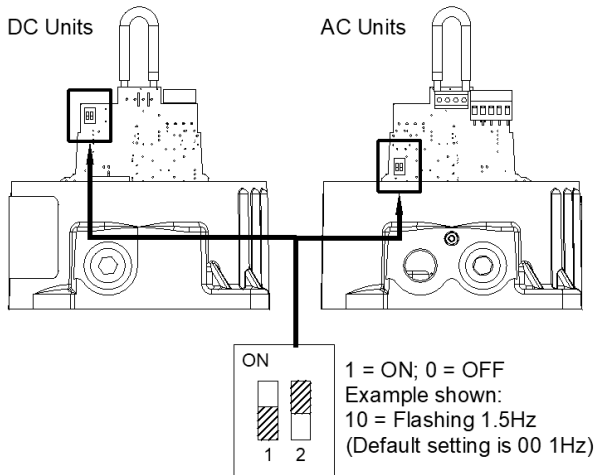


Figure 6: DIP Switch Location.

Switch Setting	S1 Mode
00	1Hz (60FPM)
01	1.33Hz (80FPM)
10	1.5Hz (90FPM)
11	Double Flash

Table 4: Switch Positions for Flash Patterns

## 9) End of Line Monitoring (DC Units)

All DC units have a blocking diode fitted in their supply input lines. An end of line monitoring diode or an end of line monitoring resistor can be connected across the +ve and –ve terminals in the flameproof chamber. If an end of line resistor is used it must have a minimum resistance value of 3k3 ohms and a minimum wattage of 0.5W or a minimum resistance value of 500 ohms and a minimum wattage of 2W.

The resistor must be connected directly across the +ve and -ve terminals as shown in the following drawing. The resistor leads should be kept as short as possible.

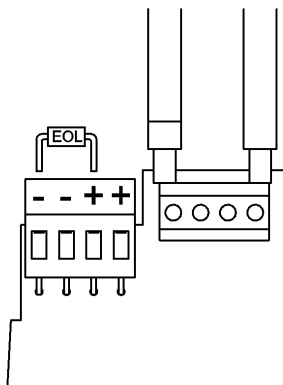


Figure 7: End of Line Resistor Placement.

## 10) Interchangeable & Spare Parts



Warning – Hot surfaces. External surfaces and internal components may be hot after operation, take care when handling the equipment.

The beacon lens is interchangeable, contact European Safety Systems Ltd for a replacement lens available in various colours.

The guard is an integral part of the protection and must be reassembled exactly the same way as it was disassembled.

To change the lens, unscrew the M5 socket head screws and remove the M5 screws, M5 spring & flat washers.

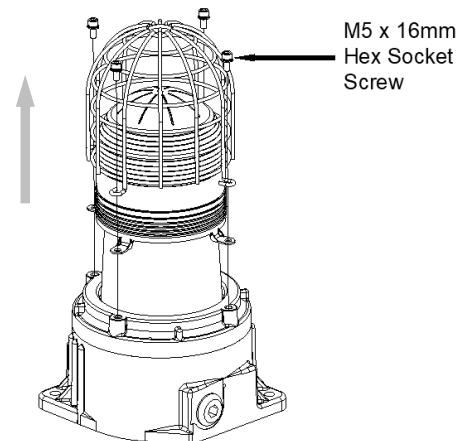


Figure 8: Removal of Lens.

Remove the guard and replace the old lens with the new lens.

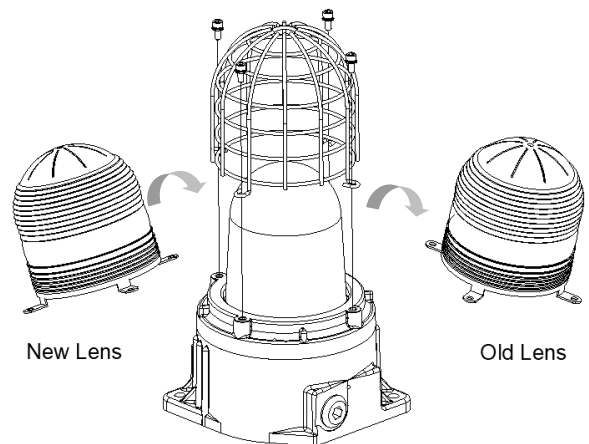


Figure 9: Changing of Lens.

Fit the guard back on to the lens and casting, align the holes of the guard, lens and casting. To reattach the lens, the fixings MUST be in the order shown in figure 10.

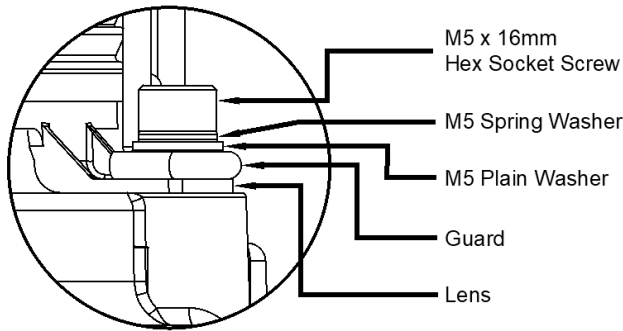


Figure 10: Lens & Guard Fixings Order.

## 12) SIL 2 Reliability Data

Reliability and Functional safety IEC/EN61508 which has been assessed and is considered suitable for use in low demand safety function:

1. Random Hardware Failures and Architectural constraints (route 2<sub>H</sub>).
2. As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2.

The product was assessed against failure modes:

- Failure respond to an input by lighting a beacon.
  - Spurious light output despite no input.
3. When employing the device in a SIL2 compliant system the user should ensure frequent or continuous automatic monitoring of continuity.

## 11) Maintenance, Overhaul and Repair

Maintenance, repair and overhaul of the equipment should only be carried out by suitably qualified personnel in accordance with the current relevant standards:

EN60079-19/IEC60079-19 Explosive atmospheres - Equipment repair, overhaul and reclamation

EN 60079-17/IEC60079-17 Explosive atmospheres - Electrical installations inspection and maintenance

Units must not be opened while an explosive atmosphere is present.

If opening the unit during maintenance operations a clean environment must be maintained and any dust layer removed prior to opening the unit.

Repair of the flameproof threaded joints and cemented joints is not permitted.

Electrostatic charging hazard - Clean only with a damp cloth.

Integrity in respect of failure to function	SIL2 & SIL1
Total Failure rate	0.48 pmh
"Hazardous" failure rate (revealed)	0 pmh
"Hazardous" failure rate (unrevealed)	0.48 pmh
"Safe" failure rate (revealed)	0 pmh
"Safe" failure rate (unrevealed)	0
System type	B
Hardware Fault Tolerance	0
Diagnostic Coverage	>60%
PFD (hazardous failure)	$2.1 \times 10^{-3}$
Proof Test Interval	Up to 1 year

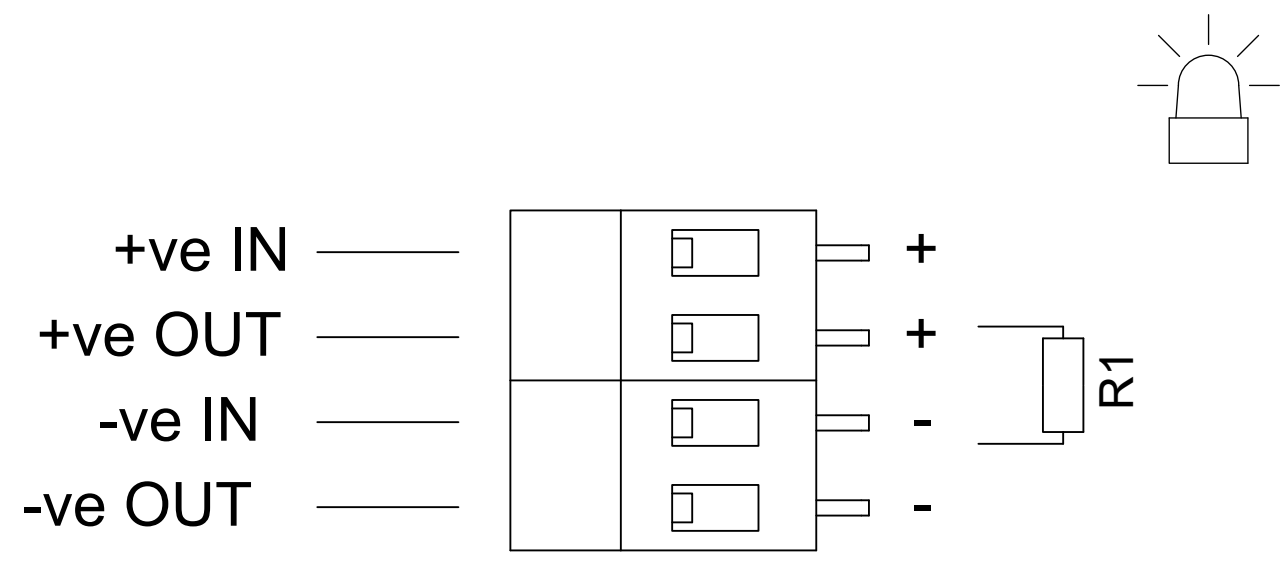


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1	2	3	4	5	6	7	8	9	10
							ISSUE	MOD No.	REASON - INITIAL - DATE
							A		INTRODUCTION J.S - 14/11/19
							B		RE-DRAWN IN 2D NOTES, TERMINALS & EOL RESISTOR ADDED DAH 17/12/19
							C		NEW PCBA & FORMAT INTRODUCED J.S - 22/03/21

DC XENON GNExB2 X05, X10, X15 & 21J UNITS  
 Line Monitoring  
 Power: +ve & -ve

OPTIONAL LINE MONITORING RESISTOR, CUSTOMER SUPPLIED,  
 RECOMMENDED MINIMUM VALUES:  
 500Ω MIN, 2W MIN OR 3K3Ω MIN, 0.5W MIN



DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (Kg)	THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT. © EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE	 EUROPEAN SAFETY SYSTEMS LTD IMPRESS HOUSE MANSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM	ALL DIMENSIONS IN MM			A3
	J.SPILLER	14/11/19					IF IN DOUBT, ASK - DO NOT SCALE			
	CHECKED	DATE	MATERIAL				TITLE GNExB2 X05/X10/X15/X21 BEACON WIRING DIAGRAMS			
	R.N.POTTS	14/11/19	ALTERNATIVE MATERIAL				SCALE	SHEET	DRAWING NUMBER	
STANDARDS	APPROVED	DATE			NTS	1 OF 2	D156-06-201			
GNExB2 BEACONS	R.N.POTTS	14/11/19								

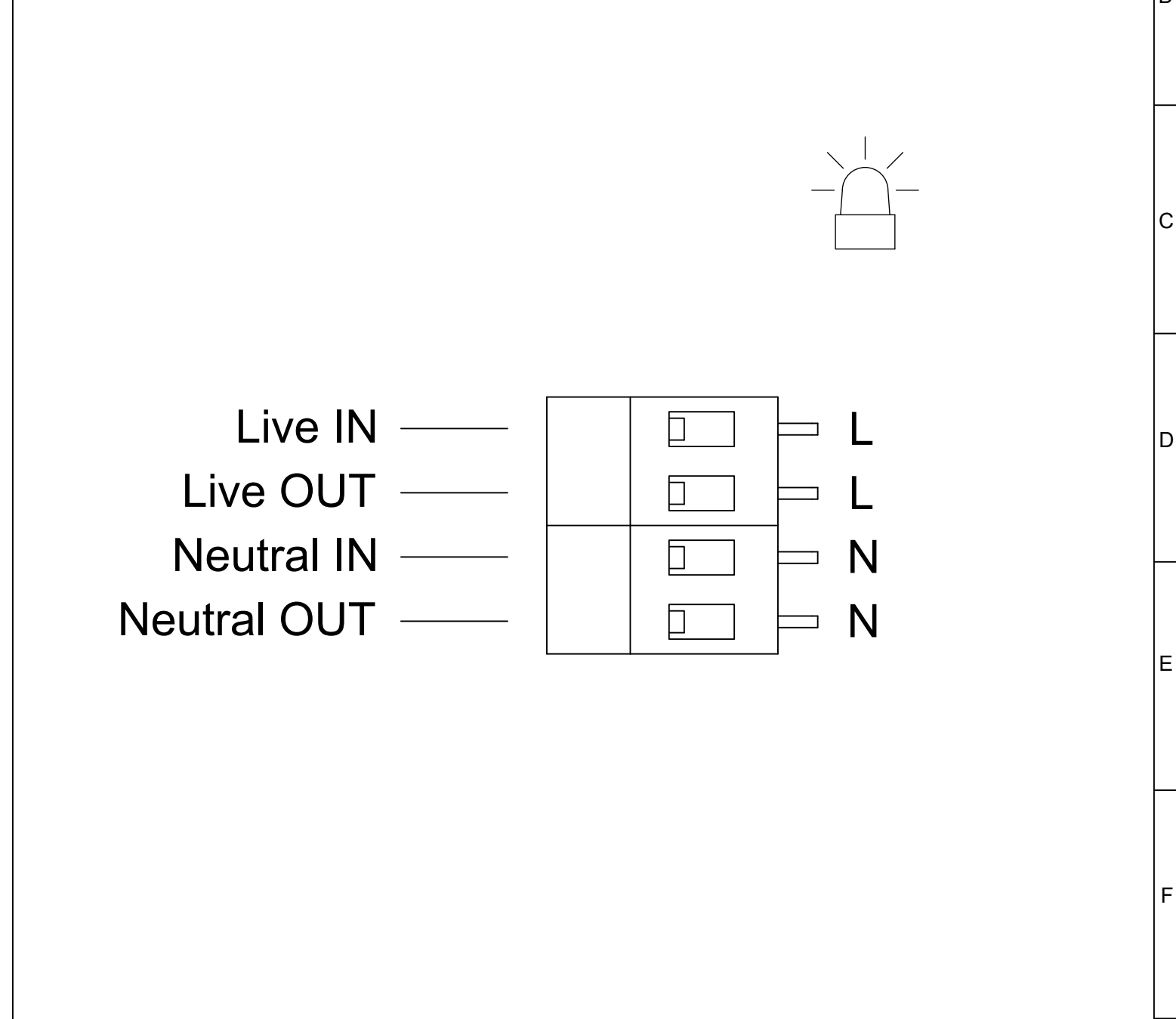
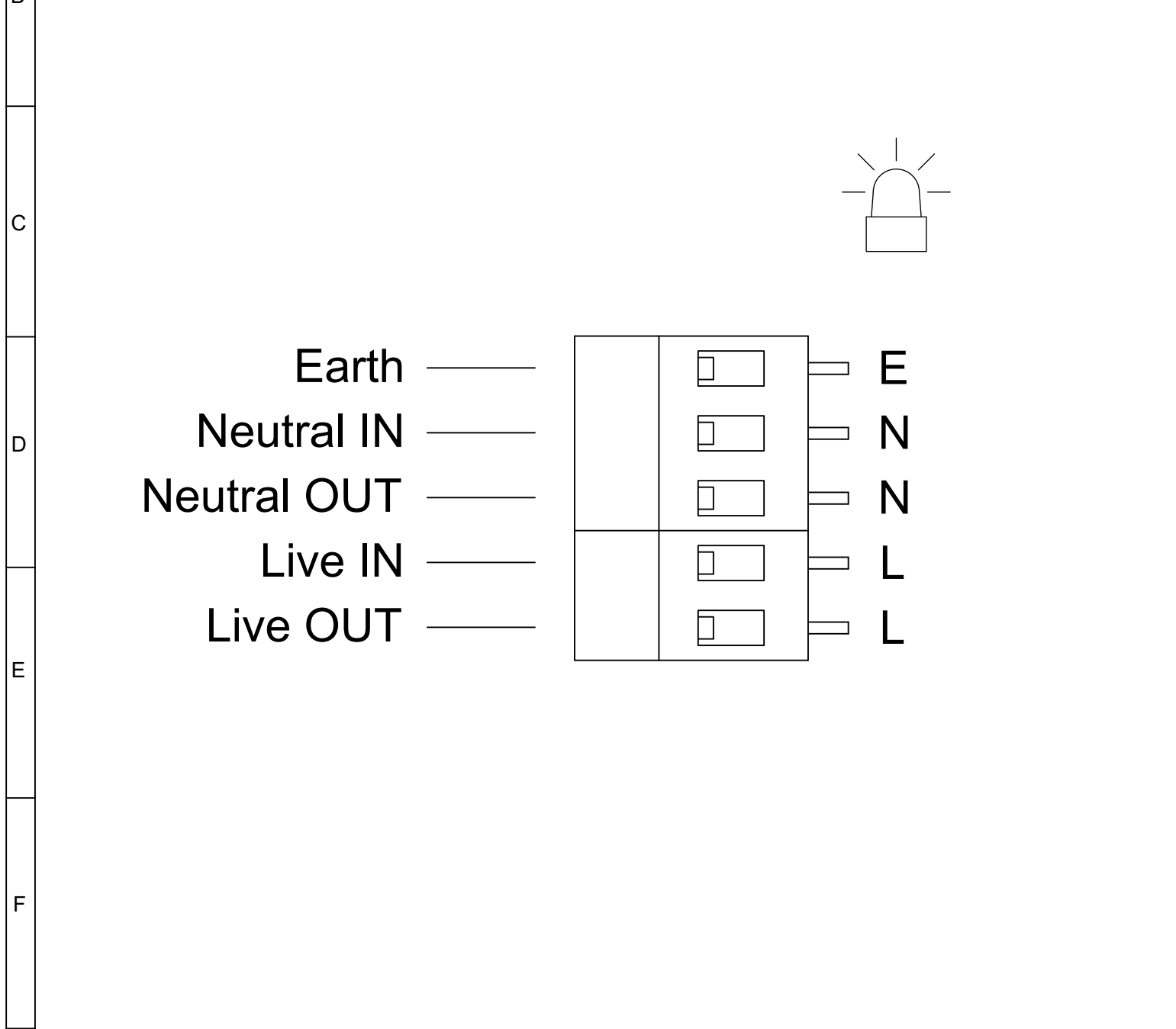
1	2	3	4	5	6	7	8	9	10
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

AC XENON GNExB2 X05, X10 & X15 UNITS

AC XENON GNExB2 X21 UNITS

Power: Live & Neutral

Power: Live & Neutral



DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN	DATE	SURFACE FINISH	WEIGHT (Kg)	THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.	 warning signals EUROPEAN SAFETY SYSTEMS LTD IMPRESS HOUSE MANSSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM	ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		 	A3
	J.SPILLER	14/11/19					MATERIAL	TITLE GNExB2 X05/X10/X15/X21 BEACON WIRING DIAGRAMS		
	CHECKED	DATE	ALTERNATIVE MATERIAL	SCALE			SHEET	DRAWING NUMBER		
	R.N.POTTS	14/11/19		NTS			2 OF 2	D156-06-201		
STANDARDS	APPROVED	DATE								
GNExB2 BEACONS	R.N.POTTS	14/11/19								

# EU Declaration of Conformity



Manufacturer: European Safety Systems Ltd.  
Impress House, Mansell Road, Acton  
London, W3 7QH  
United Kingdom

Authorised Representative: E2S Warnsignaltechnik UG  
Charlottenstrasse 45-51  
72764 Reutlingen  
Germany

Equipment Type: GNExB1X05  
GNExB2X05, GNExB2X10, GNExB2X15, GNExB2X21  
GNExB2LD2  
GNExJ2

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## Directive 2014/34/EU: Equipment and Protective Systems for use in Potentially Explosive Atmospheres (ATEX)

Notified Body for EU type Examination (Module B):	UL International Demko A/S Notified Body No.: 0539 Borupvang 5A, 2750 Ballerup, Denmark
EU-type Examination Certificate (Module B):	DEMKO 15ATEX1448X
Notified Body for Quality Assurance Notification / Conformity to EU-type based on quality assurance of the production process (Module D):	Sira Certification Service Notified Body No.: 2813 CSA Group Netherlands B.V, Utrechtseweg 310, 6812 AR, Arnhem, Netherlands
Quality Assurance Notification (Module D):	SIRA 05 ATEX M342
Provisions fulfilled by the equipment:	II 2G Ex db IIC T4...T6 Gb II 2D Ex tb IIC T80°C...T138°C Db IP6X Dust Protection to EN60079-0 / EN60079-31
Standards applied:	EN IEC 60079-0:2018 EN 60079-1: 2014 EN 60079-31: 2014

## Directive 2014/30/EU: Electromagnetic Compatibility Directive (EMC)

Standards applied:	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 / A1:2011 / AC: 2012 EN 61000-6-4:2007 / A1: 2011
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## Directive 2011/65/EU: Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

The product and all the components contained within it are in accordance with the restriction of the use of hazardous substances in electrical and electronic equipment, including amendment by Directive 2015/863/EU.

## Regulation (EC) 1907/2006: Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The product and all the components contained within it are free from substances of very high concern.

## Other Standards and Regulations

EN 60529:1992+A2:2013 - Degrees of protection provided by enclosures (IP code) – enclosure rated IP66/67

# EU Declaration of Conformity



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On behalf of European Safety Systems Ltd., I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives, regulations and standards.

This Declaration is issued under the sole responsibility of the manufacturer.

A handwritten signature in black ink, appearing to read 'Martin Streetz'.

Martin Streetz  
Quality Assurance Manager

Document No.: DC-037\_Issue\_H  
Date and Place of Issue: London, 03/12/2021



# UKCA Declaration of Conformity



Manufacturer: European Safety Systems Ltd.  
Impress House, Mansell Road, Acton  
London, W3 7QH  
United Kingdom

Equipment Type: GNExB1X05  
GNExB2X05, GNExB2X10, GNExB2X15, GNExB2X21  
GNExB2LD2  
GNExJ2

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Directive UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1 : Product or Protective System Intended for use in Potentially Explosive Atmospheres (UKCA)

Notified Body for UK type Examination (Module B):	UL International (UK) Ltd Notified Body No.: 0843 Unit 1-3 Horizon Kingsland Business Park, Wade Road, Basingstoke, Hampshire RG24 8AH UK
UK-type Examination Certificate (Module B):	UL21UKEX2136X
Notified Body for Quality Assurance Notification / Conformity to EU-type based on quality assurance of the production process (Module D):	Sira Certification Service Notified Body No.: 0518 Rake Lane, Eccleston, Chester CH4 9JN, UK
Quality Assurance Notification (Module D):	CSAE 22UKQAN0046
Provisions fulfilled by the equipment:	II 2G Ex db IIC T4...T6 Gb II 2D Ex tb IIIC T80°C...T138°C Db IP6X Dust Protection to EN60079-0 / EN60079-31
Standards applied:	EN IEC 60079-0:2018 EN 60079-1: 2014 EN 60079-31: 2014

Directive 2014/30/EU: Electromagnetic Compatibility Directive (EMC)

Standards applied:	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 / A1:2011 / AC: 2012 EN 61000-6-4:2007 / A1: 2011
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Directive 2011/65/EU: Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

The product and all the components contained within it are in accordance with the restriction of the use of hazardous substances in electrical and electronic equipment, including amendment by Directive 2015/863/EU.

Regulation (EC) 1907/2006: Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The product and all the components contained within it are free from substances of very high concern.

Other Standards and Regulations

EN 60529:1992+A2:2013 - Degrees of protection provided by enclosures (IP code) – enclosure rated IP66/67



# UKCA Declaration of Conformity



---

On behalf of European Safety Systems Ltd., I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives, regulations and standards.

This Declaration is issued under the sole responsibility of the manufacturer.

Martin Streetz  
Quality Assurance Manager

Document No.: DC-098\_Issue\_A  
Date and Place of Issue: London, 24/02/2022

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