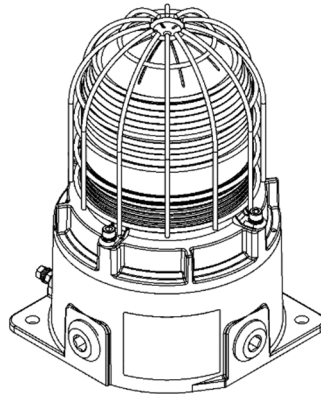


INSTRUCTION MANUAL
STExB2X05, STExB2X10, STExB2X15 & STExB2X21
Flameproof Xenon Beacons
For use in Flammable Gas and Dust Atmospheres



STExB2X05
STExB2X10
STExB2X15
STExB2X21

1) Product Table

| Standard | Model | Nom. Voltage | Voltage Range | Nom. Operating Current* | Max Current |
|--|----------------|--------------|--------------------|-------------------------|-------------|
| ATEX / IECEx / UKEx / NEC / CEC | STExB2X05DC012 | 12Vdc | 12-14Vdc | 585mA | 600mA |
| | STExB2X05DC024 | 24Vdc | 20-28Vdc | 295mA | 350mA |
| | STExB2X05DC048 | 48Vdc | 42-54Vdc | 145mA | 150mA |
| | STExB2X05AC115 | 115Vac | 110-120Vac 50/60Hz | 140mA | 200mA |
| | STExB2X05AC230 | 230Vac | 220-240Vac 50/60Hz | 70mA | 100mA |
| | STExB2X10DC024 | 24Vdc | 20-28Vdc | 605mA | 710mA |
| | STExB2X10DC048 | 48Vdc | 42-54Vdc | 230mA | 250mA |
| | STExB2X10AC115 | 115Vac | 110-120Vac 50/60Hz | 220mA | 300mA |
| | STExB2X10AC230 | 230Vac | 220-240Vac 50/60Hz | 130mA | 180mA |
| ATEX / IECEx / UKEx | STExB2X15DC024 | 24Vdc | 20-28Vdc | 835mA | 920mA |
| | STExB2X15DC048 | 48Vdc | 42-54Vdc | 330mA | 360mA |
| | STExB2X15AC115 | 115Vac | 110-120Vac 50/60Hz | 310mA | 420mA |
| | STExB2X15AC230 | 230Vac | 220-240Vac 50/60Hz | 170mA | 230mA |
| | STExB2X21DC024 | 24Vdc | 20-28Vdc | 1130mA | 1240mA |
| | STExB2X21DC048 | 48Vdc | 42-54Vdc | 530mA | 560mA |
| | STExB2X21AC115 | 115Vac | 110-120Vac 50/60Hz | 500mA | 530mA |
| | STExB2X21AC230 | 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



- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT.
- POTENTIAL ELECTROSTATIC CHARGING HAZARD – CLEAN ONLY WITH A DAMP CLOTH.
- 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.

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 | |
| STExB2: X05DC012 X05DC024 X05DC048 | Ex db IIC T5 Gb Ta -50°C to +70°C Ex db IIC T6 Gb Ta -50°C to +55°C Ex tb IIIC T92°C Db Ta -50°C to +70°C |
| STExB2: 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 |
| STExB2: 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 T118°C Db Ta -50°C to +70°C |
| STExB2: X10AC115 X10AC230 | Ex db IIC T4 Gb Ta -50°C to +70°C Ex tb IIIC T128°C Db Ta -50°C to +70°C |
| STExB2: X15DC024 X15DC048 | Ex db IIC T4 Gb Ta -50°C to +70°C Ex tb IIIC T127°C Db Ta -55°C to +70°C |
| STExB2: 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 T131°C Db Ta -55°C to +70°C |
| STExB2: X21DC024 X21DC048 | 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 T131°C Db Ta -50°C to +70°C |

| | |
|----------|--|
| STExB2: | Ex db IIC T3 Gb Ta -50°C to +65°C |
| X21AC115 | Ex db IIC T4 Gb Ta -50°C to +55°C |
| X21AC230 | Ex tb IIIC T137°C Db Ta -50°C to +65°C |

Certificate No. DEMKO 16 ATEX1466X
IECEX ULD 16.0017X
UL21UKEX2019X

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

CE Marking and Notified Body No.  2813

UKCA Marking and Notified Body No.  0518

3.2. 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 | |
| STExB2: 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 +55°C |
| STExB2: 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 |
| STExB2: 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 |
| STExB2: X10AC115 X10AC230 | Class I Zone 1 AEx db IIC T4 Gb Ta -50°C to +70°C |

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 | |
| STExB2: X05DC012 X05DC024 X05DC048 | Ex db IIC T5 Gb Ta -50°C to +70°C Ex db IIC T6 Gb Ta -50°C to +55°C |
| STExB2: 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 |
| STExB2: X10DC024 X10DC048 | Ex db IIC T4 Gb Ta -50°C to +70°C Ex db IIC T5 Gb Ta -50°C to +45°C |
| STExB2: X10AC115 X10AC230 | Ex db IIC T4 Gb Ta -50°C to +70°C |

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

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

| Standards | |
|--|---|
| STExB2X 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 | |
| STExB2: 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 +55°C |
| STExB2: 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 |
| STExB2: 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 |
| STExB2: X10AC115 X10AC230 | Class I Div 2 Group ABCD T4 Ta -50°C to +70°C |
| *SIL Suitable | |

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.

P

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 (STExB2X15AC & STExB2X21DC up to 70°C ambient; STExB2X21AC up to 65°C ambient) |
| T4 | 135°C (STExB2X05AC, STExB2X10DC, STExB2X10AC & STExB2X15DC up to 70°C ambient; STExB2X15AC & STExB2X21DC up to 65°C ambient; STExB2X21AC up to 55°C ambient) |
| T5 | 100°C (STExB2X05DC up to 70°C ambient; STExB2X05AC up to 55°C ambient; STExB2X10DC up to 45°C ambient) |
| T6 | 85°C ATEX / IECEx / UKEx: (STExB2X05DC up to 55°C ambient, STExB2X05AC 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) | |
| STExB2X05DC | 92°C |
| STExB2X05AC | 110°C |
| STExB2X10DC | 118°C |
| STExB2X10AC | 128°C |
| STExB2X15DC | 127 °C |
| STExB2X15AC | 131°C |
| STExB2X21DC | 131°C |
| STExB2X21AC | 142°C |

| |
|--|
| Equipment Category |
| 2G / 2D |
| Equipment Level Protection |
| Gb, Gc, Db, Dc |
| 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 flameproof threaded joints and cemented joints is not permitted.

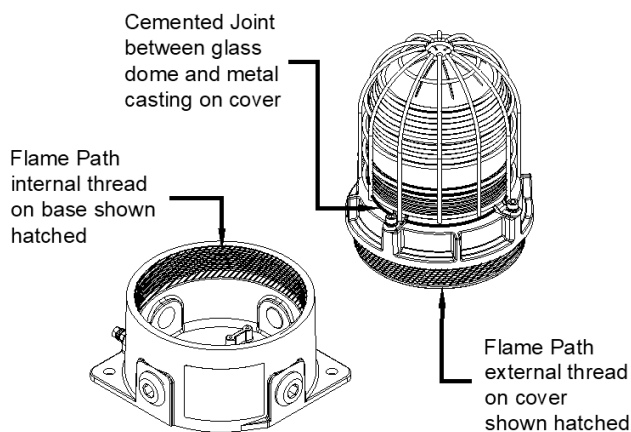


Figure 1: Flame Path.

The metallic enclosure has a non-conductive coating. These 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.

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.

STExB2X21 models shall not be mounted with the lamp down.

The STEx beacons should be securely bolted to a flat surface using 9.0mm diameter bolt holes in the base of the unit. See figure 2.

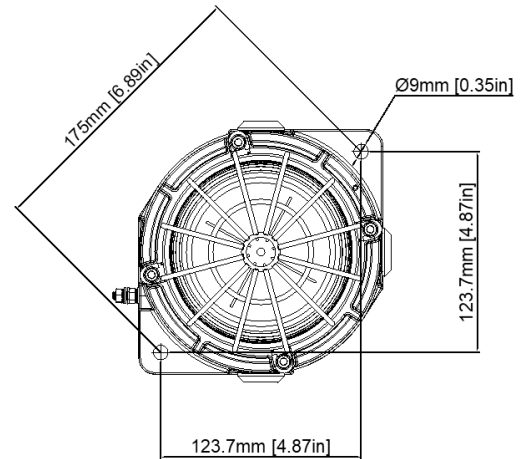


Figure 2: Fixing Location for B2 Beacon.

6.2. Access to the Flameproof Enclosure



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

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).

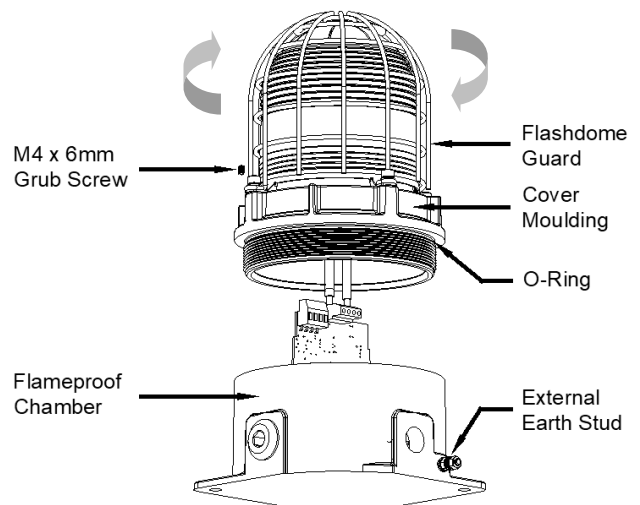


Figure 3: Accessing the Explosion Proof Enclosure.

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.

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

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

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



Warning – High voltage may be present, risk of electric shock. DO NOT open when energised, disconnect power before opening.

The beacon 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 0.5-4mm² / AWG 20-12 or stranded wire, sizes 0.5-2.5mm² / AWG 24-14. Wire insulation needs to be stripped 8mm. Wires may be fitted securely with crimped ferrules.

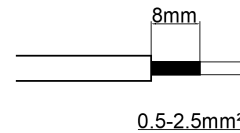


Figure 4: Wire Preparation.

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.

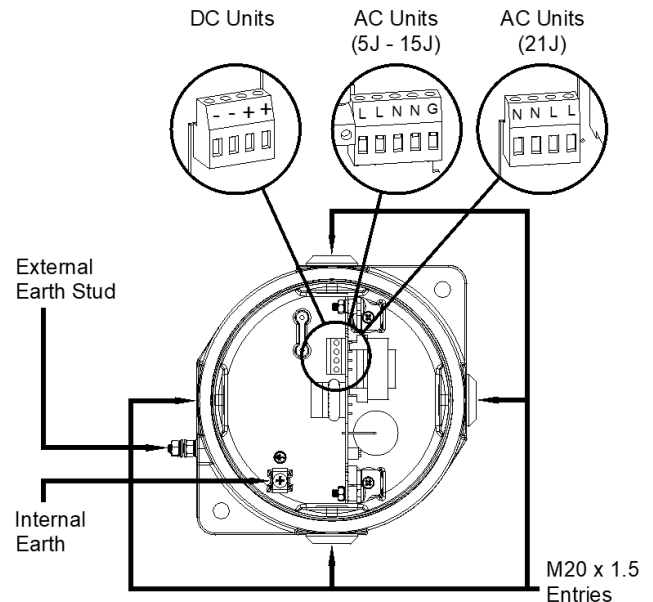


Figure 5: STExB2 Entries and Terminal Block Location.

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 2.5mm².

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 9 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 M5 earth stud, using a ring crimp terminal to secure the earth conductor to the earth stud. The external earth conductor should be at least 4mm² 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

For high ambient temperatures the cable entry temperature may exceed 70°C or the cable branching point temperature may exceed 80°C and therefore suitable heat resisting cables and cable glands must be used, with a rated service temperature at least as stated below:

| Model STExB2 | Max Ambient Temperature (°C) | | | | | | | | | | | |
|-----------------|------------------------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |
| X05DC | | | | | | | | 72 | 77 | 82 | 87 | 92 |
| X05AC | | | | | | 74 | 79 | 84 | 89 | 94 | 99 | 104 |
| X10DC | | | | 71 | 76 | 81 | 86 | 91 | 96 | 101 | 106 | 111 |
| X10AC | | | | 72 | 77 | 82 | 87 | 92 | 97 | 102 | 107 | 112 |
| X15DC | | 72 | 77 | 82 | 87 | 92 | 97 | 102 | 107 | 112 | 117 | 122 |
| X15AC | | | | 74 | 79 | 84 | 89 | 94 | 99 | 104 | 109 | 114 |
| X21DC | | 72 | 77 | 82 | 87 | 92 | 97 | 102 | 107 | 112 | 117 | 122 |
| X21AC | 73 | 78 | 83 | 88 | 93 | 98 | 103 | 108 | 113 | 118 | 123 | 128 |

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 STExB2 | Max Ambient Temperature (°C) | | | | | | | | | | | |
|-----------------|------------------------------|----|----|----|----|----|----|----|----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |
| X05DC | | | | | | 62 | 67 | 72 | 77 | 82 | 87 | 92 |
| X05AC | | | | 64 | 69 | 74 | 79 | 84 | 89 | 94 | 99 | 104 |
| X10DC | | 61 | 66 | 71 | 76 | 81 | 86 | 91 | 96 | 101 | 106 | 111 |
| X10AC | | | 62 | 67 | 72 | 77 | 82 | 87 | 92 | 97 | 102 | 107 |

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 entries have an M20 x 1.5 – 6H entry thread. Only suitably rated and ATEX / IECEx & UKEx 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 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.

Any unused cable 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.

For combustible dust applications, the cable entry device and blanking elements shall be in type of explosion protection and shall have an IP 6X rating.

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 STEx 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 and certified adapters.

8) Flash Pattern Settings

8.1. Flash Rate Setting



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

The STExB2 beacons can produce different flash patterns as shown in Table 3. The flash patterns are selected by operation of the flash setting DIP switch on the PCBA (See Fig 6).

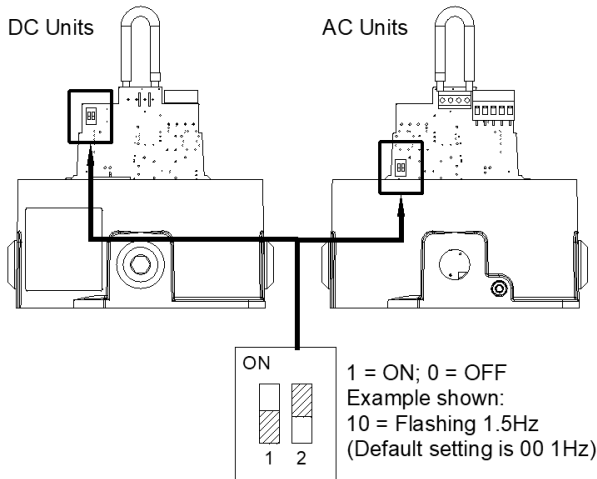


Figure 6: DIP Switch Location.

| 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.

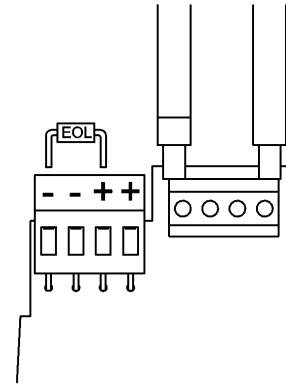


Figure 7: End of Line Resistor Placement.

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.

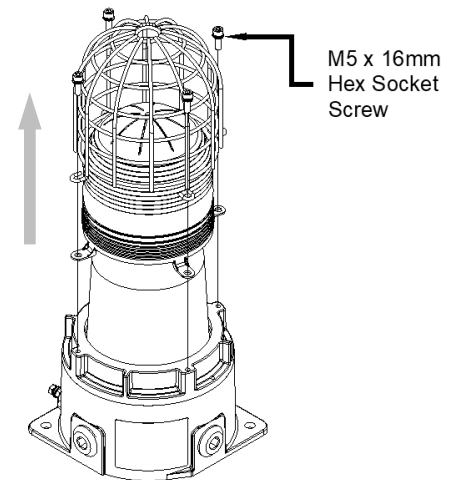


Figure 8: Removal of Lens.

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

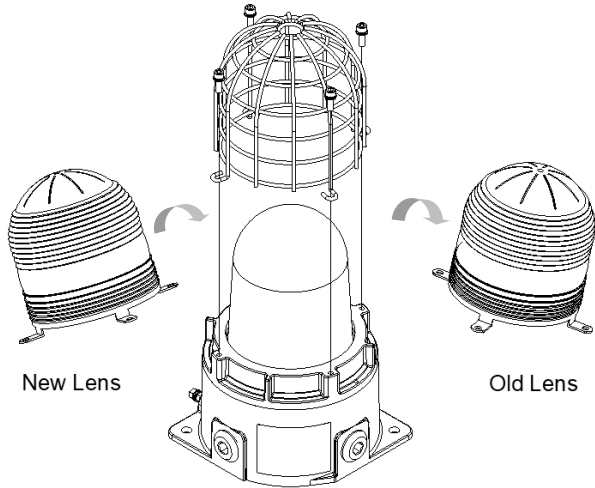


Figure 9: Changing of Lens.

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.

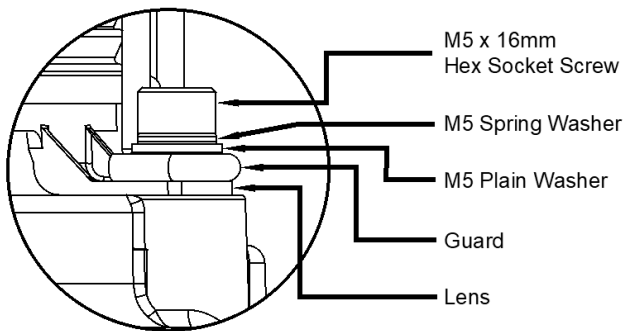


Figure 10: Lens & Guard Fixings Order.

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.

Potential electrostatic charging hazard - Clean only with a damp cloth.

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_H).
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.

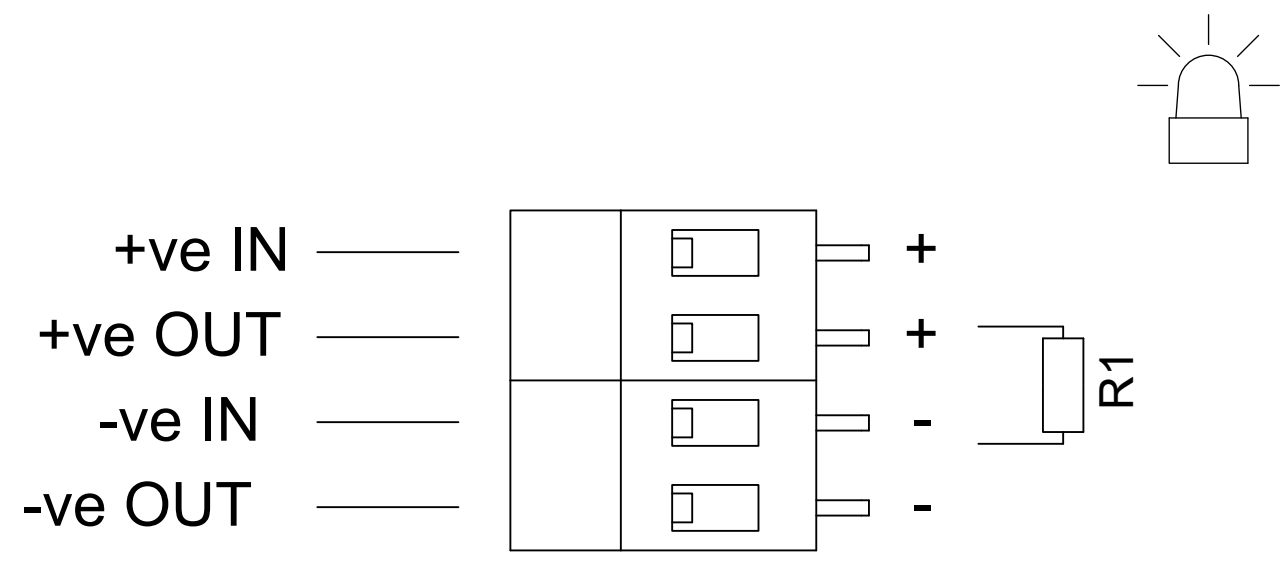
| | |
|---|----------------------|
| Integrity in respect of failure to function | SIL2 & SIL1 |
| Total Failure rate | 0.48 pmh |
| "Hazardous" failure rate (revealed) | 0 pmh |
| "Hazardous" failure rate (unrevealed) | 0.48 pmh |
| "Safe" failure rate (revealed) | 0 pmh |
| "Safe" failure rate (unrevealed) | 0 |
| System type | B |
| Hardware Fault Tolerance | 0 |
| Diagnostic Coverage | >60% |
| PFD (hazardous failure) | 2.1×10^{-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 RSR - 03/07/19 |
| | | | | | | | B | | INPUT TERMINALS & EOL RESISTOR ADDED DAH - 17/12/19 |
| | | | | | | | C | | NEW PCBA & FORMAT INTRODUCED J.S - 22/03/21 |

DC XENON STExB2 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

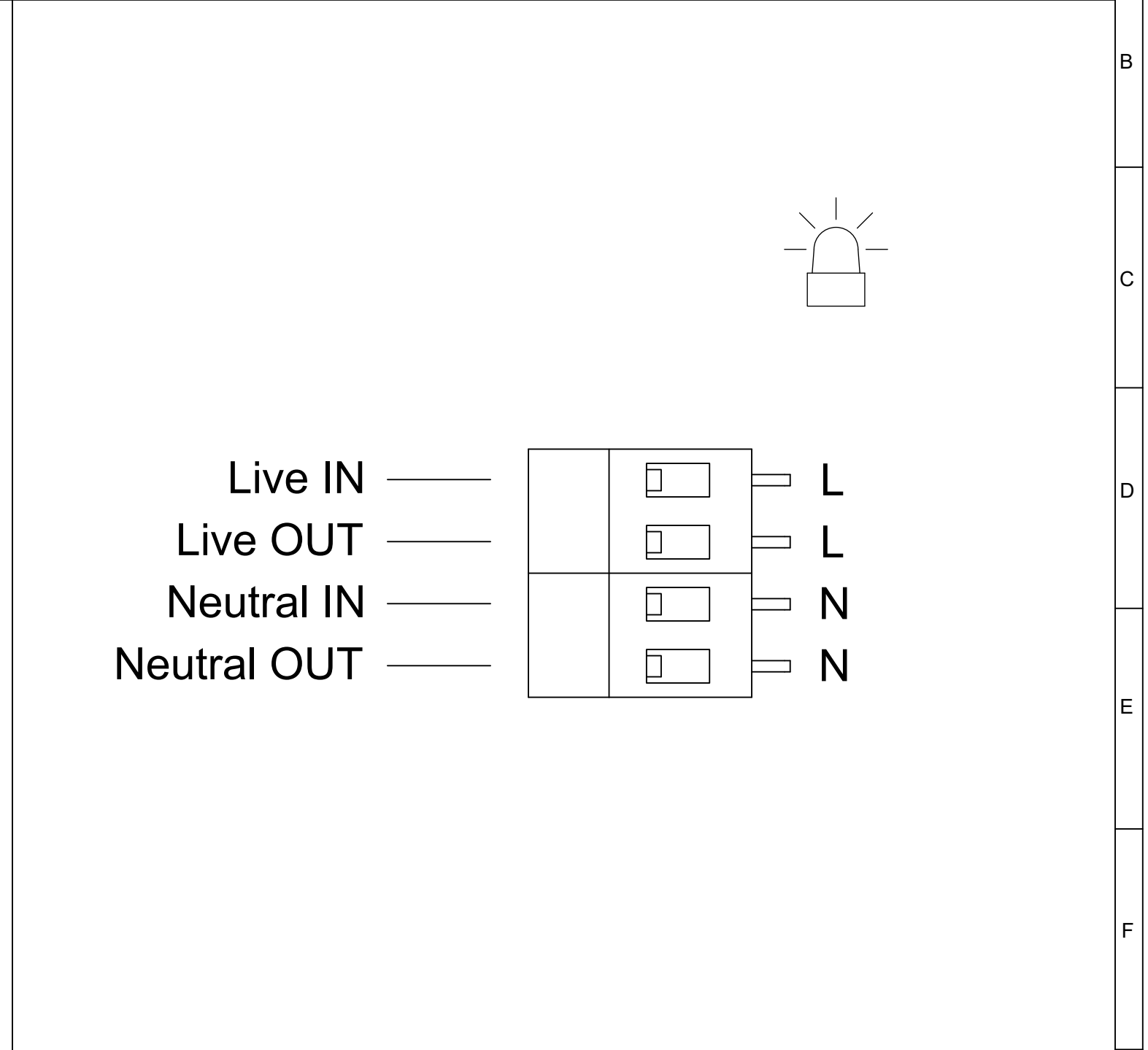
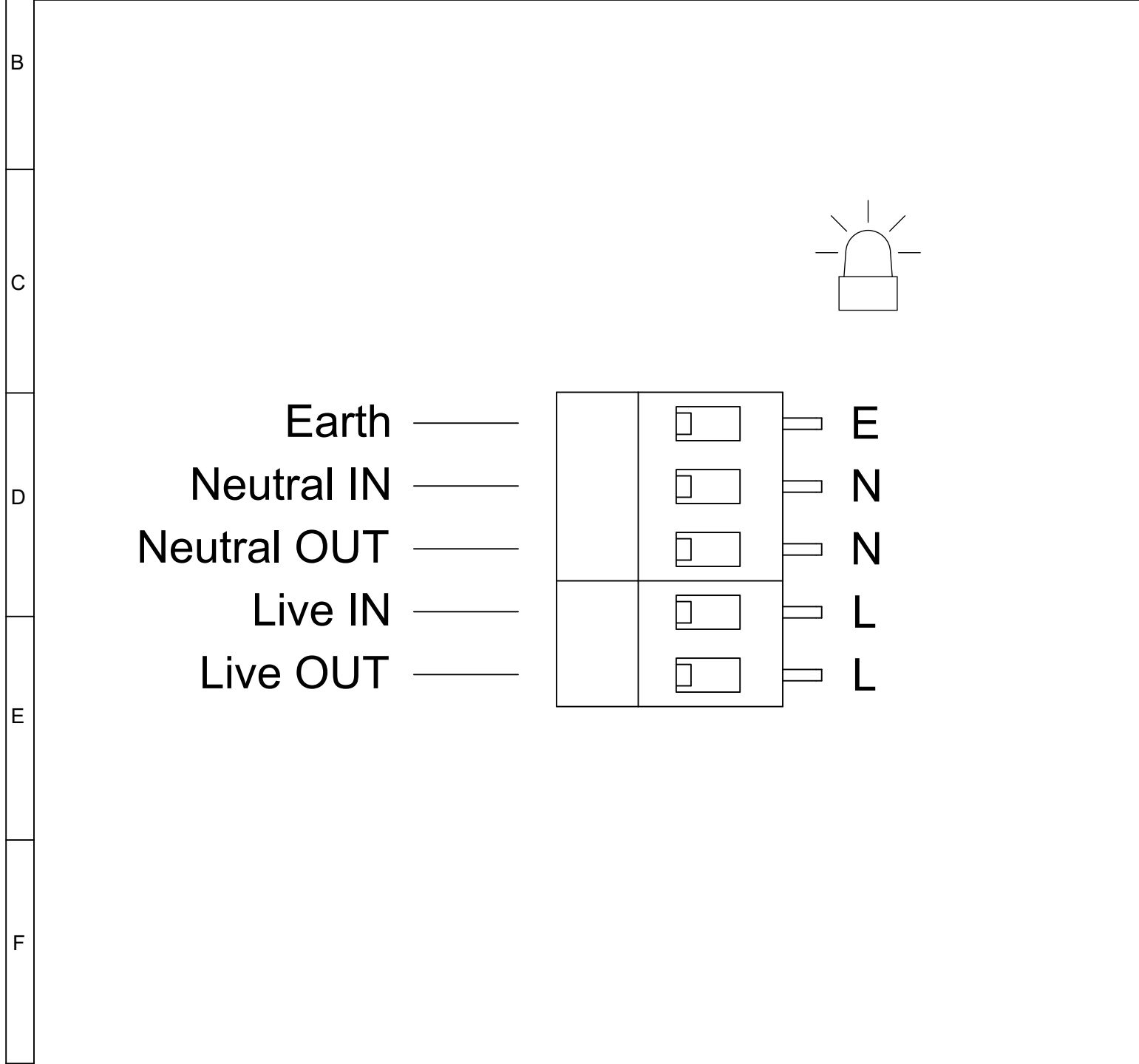


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|---|-----------|----------|----------------------|-------------|--|--|--|--|---|----|
| DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS | DRAWN | DATE | SURFACE FINISH | WEIGHT (Kg) | <p>THIS 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.</p> <p>© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE</p> |  EUROPEAN SAFETY SYSTEMS LTD IMPRESS HOUSE MANSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM | ALL DIMENSIONS IN MM | |   | A3 |
| | R.S.RAIT | 03/07/19 | | | | | IF IN DOUBT, ASK - DO NOT SCALE | | | |
| | STANDARDS | CHECKED | DATE | MATERIAL | | | TITLE STExB2 X05/X10/X15/X21 BEACON WIRING DIAGRAMS | | | |
| STExB2 BEACONS | R.N.POTTS | 03/07/19 | ALTERNATIVE MATERIAL | | SCALE | SHEET | DRAWING NUMBER | | | |
| | R.N.POTTS | 03/07/19 | | | NTS | 1 OF 2 | D199-06-201 | | | |

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
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| | | | | | | | B | | INPUT TERMINALS & EOL RESISTOR ADDED DAH - 17/12/19 |
| | | | | | | | C | | NEW PCBA & FORMAT INTRODUCED J.S - 22/03/21 |

AC XENON STExB2 X05, X10 & X15 UNITS
Power: Live & Neutral

AC XENON STExB2 X21 UNITS
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. | EUROPEAN SAFETY SYSTEMS LTD IMPRESS HOUSE MANSELL ROAD ACTON LONDON W3 7QH WWW.E2S.COM | ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE | | | A3 |
| | R.S.RAIT | 03/07/19 | | | | | MATERIAL | | | |
| | STANDARDS | CHECKED | DATE | ALTERNATIVE MATERIAL | | | TITLE STExB2 X05/X10/X15/X21 BEACON WIRING DIAGRAMS | | | |
| STExB2 BEACONS | R.N.POTTS | 03/07/19 | | | SCALE | SHEET | DRAWING NUMBER | | | |
| | APPROVED | DATE | | | NTS | 2 OF 2 | D199-06-201 | | | |
| | R.N.POTTS | 03/07/19 | | | | | | | | |

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: STExS1, STExS2, STExL1, STExL2
STExB2X05, STExB2X10, STExB2X15, STExB2X21
STExB2LD2, STExB2RT1
STExC1X05
STExJ2

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 16ATEX1466X |
| 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 T6...T3 Gb II 2D Ex tb IIIC T82°C...T137°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 |
|--------------------|--|

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 60529:1991 / A1:2000 / A2:2013 - Degrees of protection provided by enclosures (IP code) – enclosure rated IP66

EU 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.

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

Martin Streetz
Quality Assurance Manager

Document No.: DC-070_Issue_G
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: STExS1, STExS2, STExL1, STExL2
STExB2X05, STExB2X10, STExB2X15, STExB2X21
STExB2LD2, STExB2RT1
STExC1X05
STExJ2

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): | UL21UKEX2019X |
| 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 T6...T3 Gb II 2D Ex tb IIIC T85°C...T137°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 |
|--------------------|--|

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 60529:1991 / A1:2000 / A2:2013 - Degrees of protection provided by enclosures (IP code) – enclosure rated IP66

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.

A handwritten signature in black ink, appearing to read 'Martin Streetz', written over a faint circular stamp.

Martin Streetz
Quality Assurance Manager

Document No.: DC-100_Issue_A
Date and Place of Issue: London, 24/02/2022

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