

# [1] UNITED KINGDOM CONFORMITY ASSESSMENT

# TYPE EXAMINATION CERTIFICATE

[2] Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended by UKSI 2019:696)

[3] Type Examination Certificate No.: UL21UKEX2131X Rev. 2

[4] Product: D2xS1\* (Sounder), D2xS2\* (Sounder), D2xL1 (Loudspeaker),

D2xL2 (Loudspeaker), D2xC1\* (Sounder Beacon), D2xB1\*

(Beacon), D2xC2\* (Sounder Beacon), D2xJ1\* (Junction box), and

D2xH1-E (Heat Detector)

[5] Manufacturer: European Safety Systems Limited

[6] Address: Impress House, Mansell Road, Acton, London W3 7QH United Kingdom

[7] This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8] UL International (UK) Ltd certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations. The examination and test results are recorded in the confidential report **DK/ULD/ExtR14.0009/08**.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015/A1:2018 EN 60079-31:2014 IEC 60079-31, Edition 3.0 (2022-01)

Except in respect of those requirements listed at section 19 of the schedule to this certificate.

- [10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the Schedule to this certificate.
- [11] This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- [12] The marking of the product shall include the following:

Ex ec IIC T6...T1 Gc (D2xS1\*, D2xS2\*, D2xL1, D2xL2, D2xC1\*, D2xB1\*, D2xC2\* and D2xJ1\*)

Ex II 3 G Ex db ec IIC T6 Gc (D2xH1-E only)

⟨Ex⟩ II 3 D Ex tc IIIC T55...T110°C Dc

Certification Officer
Andrew Moffat

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the UKEx Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

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UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade

Road, Basingstoke RG24 8AH, UK Phone: +44 (0)1256 312100



## **Schedule** TYPE EXAMINATION CERTIFICATE No. [14] **UL21UKEX2131X** Rev. 2

#### [15] **Description of Product**

D2xS1 (sounder) comprises an aluminium enclosure housing components to generate selectable tones. The enclosure is sealed with o-rings to prevent ingress of dust or water. Up to two M20 threaded entries may be provided for installation of appropriately certified cable entry devices by the end user.

D2xS2 (sounder) comprises an aluminium enclosure housing components to generate selectable tones. The enclosure is sealed with o-rings to prevent ingress of dust or water. Up to three M20 threaded entries may be provided for installation of appropriately certified cable entry devices by the end user.

D2xC1X05 (sounder beacon) is the same aluminium housing as the D2xS1, except on one end the beacon assembly is mounted. The lamp is protected by a lens and wire guard. The lens and retaining ring screws are sealed with o-rings to prevent ingress of dust or water. Additional electrical components associated with the operation of the 5 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xC1X10 (sounder beacon) is the same aluminium housing as the D2xS1, except on one end the beacon assembly is mounted. The lamp is protected by a lens and wire guard. The lens and retaining ring screws are sealed with o-rings to prevent ingress of dust or water. Additional electrical components associated with the operation of the 10 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xB1X05 (beacon) comprises an aluminium enclosure housing components to generate visual outputs. The enclosure is sealed with o-rings to prevent ingress of dust and water. Up to 7 M20, % NPT or % NPT threaded entries may be provided for installation of appropriately certified cable entry devices by the end user. The lamp is protected by a lens and an optional wire guard. Additional electrical components associated with the operation of the 5 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xB1X10 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. Additional electrical components associated with the operation of the 10 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xB1LD2 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xB1LD3 (beacon) is the same aluminum housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "DC" followed by the voltage.

D2xC2X05 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. Additional electrical components associated with the operation of the 5 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xC2X10 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. Additional electrical components associated with the operation of the 10 Joule beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xC2LD2 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "AC or DC" followed by the voltage.

D2xC2LD3 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. Additional electrical components associated with the operation of the LED beacon, are installed within the housing and reflected by the nomenclature with "DC" followed by the voltage.

D2xJ1T (Junction Box) is the same aluminium housing as the D2xB1X05 with the junction box lid replacing the lens assembly lid. The enclosure is provided with a 12 Way Terminal Block. The D2xJ1T is approved as an accessory to the D2x product range.

D2xJ1D (Junction Box) is the same aluminium housing as the D2xB1X05 with the junction box lid replacing the lens assembly lid. The enclosure is provided with a DIN rail for installation for up to 12 AKZ 2.5 terminal blocks, and 4 AKE 2.5 Terminal blocks. The D2xJ1D is approved as an accessory to the D2x product range.

D2xB1XH1DC024 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. The electronics are similar to that of D2xB1X05DC024, with the addition of a low voltage sub board to control flash rate timing.

D2xB1XH2DC024 (beacon) is the same aluminium housing enclosure as the D2xB1X05. The lamp is protected by a lens and an optional wire guard. The electronics are similar to that of D2xB1X10DC024, with the addition of a low voltage sub board to control flash rate timing.



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D2xC2XH1DC024 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. The model utilizes the D2xB1XH1DC024 beacon coupled with D2xS1DC024.

D2xC2XH2DC024 (sounder beacon) is the same aluminium housing as the D2xB1X05, coupled with the D2xS1 aluminium enclosure. Two brass connectors with locknuts secure the two housings together with a neoprene foam seal providing the ingress protection. The model utilizes the D2xB1XH2DC024 beacon coupled with D2xS1DC024.

D2xL\* (Loudspeaker) comprises an aluminium enclosure housing components to generate selectable tones. Up to three M20 threaded entries may be provided for installation of appropriately certified cable entry devices by the end user. D2xL1 incorporates a 15W driver, D2xL2 incorporates a 25W driver.

D2xH1-E (Heat detector) utilises D2xJ1 junction box and is fitted with heat detector probe, installed in one of the threaded entries and may be fitted with optional indicator LED module (except for Ex ec models).

## Nomenclature:

#### Sounder:

Example - D2xS1DC024A1R

| Model                                                                                                          | Model Voltage<br>(refer to electrical<br>tables below) | Suffix                                                                                                       |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| D2xS1<br>(low power)                                                                                           | AC115<br>AC230<br>DC024<br>DC048                       | Up to 4 alpha numeric characters, not associated with equipment certification                                |
| D2xS2F and D2xS2H<br>(medium and high power, F and H denote the<br>size of the horn which is a mechanical part | AC230                                                  | -A – Normal type.  Up to 4 alpha numeric characters, not associated with equipment certification             |
| outside of the type of protection)                                                                             | DC024                                                  | -A – Normal typeS – SIL type.  Up to 4 alpha numeric characters, not associated with equipment certification |

### Combined sounder beacon:

Example - D2xC1X05DC024AR/C

| Model                   | Beacon energy (Joules) | Model Voltage<br>(refer to electrical<br>tables below) | Suffix                           |
|-------------------------|------------------------|--------------------------------------------------------|----------------------------------|
|                         |                        | AC115                                                  |                                  |
| D2xC1X                  | 05, 10                 | AC230                                                  |                                  |
| (low power)             | 03, 10                 | DC024                                                  |                                  |
|                         |                        | DC048                                                  |                                  |
|                         |                        | DC024                                                  |                                  |
| D2xC2X                  | 05.40                  | DC048                                                  |                                  |
| (medium and high power) | 05, 10                 | AC115                                                  |                                  |
|                         |                        | AC230                                                  | Up to 4 alpha numeric characters |
|                         |                        | DC024                                                  | not associated with equipment    |
| D2xC2LD2                |                        | DC048                                                  | certification                    |
| (LED beacon)            | -                      | AC115                                                  |                                  |
|                         |                        | AC230                                                  |                                  |
| D2xC2LD3                | _                      | DC024                                                  |                                  |
| (LED beacon)            |                        | D0024                                                  |                                  |
| D2xC2XH1                | _                      | DC024                                                  |                                  |
| (xenon beacon)          |                        | 50024                                                  |                                  |
| D2xC2XH2                | _                      | DC024                                                  |                                  |
| (xenon beacon)          |                        | 50021                                                  |                                  |



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## **Junction Box:**

Example – D2xJ1T

| Model  | Model Voltage<br>(refer to electrical tables<br>below) |
|--------|--------------------------------------------------------|
| D2xJ1T | 54Vdc/230Vac 50/60Hz<br>Max.                           |
| D2xJ1D | 10A Max                                                |

### Beacon:

Example - D2xB1X05DC024

| Model                      | Beacon energy (Joules) | Model Voltage<br>(refer to electrical<br>tables below) | Suffix                                                |
|----------------------------|------------------------|--------------------------------------------------------|-------------------------------------------------------|
| D2xB1X                     | 05, 10                 | DC024<br>DC048<br>AC115<br>AC230                       |                                                       |
| D2xB1LD2<br>(LED beacon)   | -                      | DC024<br>AC115<br>AC230                                | Up to 4 alpha numeric characters, not associated with |
| D2xB1LD3<br>(LED beacon)   | -                      | DC024                                                  | equipment certification                               |
| D2xB1XH1<br>(xenon beacon) | -                      | DC024                                                  |                                                       |
| D2xB1XH2<br>(xenon beacon) | -                      | DC024                                                  |                                                       |

## Loudspeaker:

Example – D2xL1FV100

| Model      |                                                     |
|------------|-----------------------------------------------------|
| D2xL1FV725 | 15W, 25V to 70V loudspeaker, small horn             |
| D2xL2FV725 | 25W, loudspeaker, large horn                        |
| D2xL2HV725 | 25W, loudspeaker, extra-large horn                  |
| D2xL1FV100 | 15W 100V loudspeaker, small horn                    |
| D2xL2FV100 | 25W 100V loudspeaker, large horn                    |
| D2xL2HV100 | 25W 100V loudspeaker, extra-large horn              |
| D2xL1FR008 | 15W, 8 ohm resistance loudspeaker, small horn       |
| D2xL1FR016 | 15W, 16 ohm resistance loudspeaker, small horn      |
| D2xL2FR008 | 25W 8 ohm resistance loudspeaker, large horn        |
| D2xL2FR016 | 25W 16 ohm resistance loudspeaker, large horn       |
| D2xL2HR008 | 25W 8 ohm resistance loudspeaker, extra-large horn  |
| D2xL2HR016 | 25W 16 ohm resistance loudspeaker, extra-large horn |

## **Heat Detector:**

| Model  | Model                              |
|--------|------------------------------------|
| D2xH1- | E = Ex db ec / Ex tc heat detector |

The optical radiation output of the product with respect to explosion protection, according to Schedule 1 clause 16 of the Regulation 2016 No. 1107 (as amended by UKSI 2019:696) is not covered in this certificate.

The optical radiation output of the LED indicator included in this product with respect to explosion protection, according to Schedule 1 clause 16 of the Regulation 2016 No. 1107 (as amended by UKSI 2019:696) is covered in this certificate based on Exception 1) to the scope of EN 60079-28:2015.

## Temperature range:

| Equipment<br>Group             | Type of protection | Temperature Class | Associated Maximum Ambient Temperature |
|--------------------------------|--------------------|-------------------|----------------------------------------|
| D2xS1                          | Ex ec IIC          | T4 (<135°C)       | -40°C ≤ Tamb ≤ +50°C                   |
| DZXST                          | Ex tc IIIC         | T90°C             | -40°C ≤ Tamb ≤ +50°C                   |
| D2xSF2DC024-A                  | Ex ec IIC          | T3                | -55°C ≤ Tamb ≤ +75°C                   |
| D2xSH2DC024-A                  | Ex ec IIC          | T4                | -55°C ≤ Tamb ≤ +55°C                   |
| D2xS2FDC024-S<br>D2xS2HDC024-S | Ex tc IIIC         | T95°C             | -55°C ≤ Tamb ≤ +75°C                   |
| D2xS2FAC230-A                  | Ex ec IIC          | T4                | -55°C ≤ Tamb ≤ +75°C                   |



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| Equipment                                       | Type of                 | Temperature         | Associated Maximum Ambient                   |
|-------------------------------------------------|-------------------------|---------------------|----------------------------------------------|
| Group                                           | protection              | Class               | Temperature                                  |
| D2xS2HAC230-A                                   | Ex ec IIC               | T5                  | -55°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex tc IIIC              | T93°C               | -55°C ≤ Tamb ≤ +75°C                         |
| D2xC1X05                                        | Ex ec IIC               | T2 (<300°C)         | -40°C ≤ Tamb ≤ +50°C                         |
| DZXO1X00                                        | Ex tc IIIC              | T90°C               | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex ec IIC               | T2 (<300°C)         | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC1X10                                        | Ex ec IIC               | T1 (<450°C)         | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex tc IIIC              | T110°C              | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1LD2                                        | Ex ec IIC               | T4(<135°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| DZXB ILDZ                                       | Ex tc IIIC              | T75°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D0::D41 D0                                      | Ex ec IIC               | T4(<135°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1LD3                                        | Ex tc IIIC              | T75°C               | -40°C ≤ Tamb ≤ +50°C                         |
| DO D41/05D0004                                  | Ex ec IIC               | T2(<300°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1X05DC024                                   | Ex tc IIIC              | T80°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1X05DC048                                   | Ex ec IIC               | T3(<200°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1X05AC115<br>D2xB1X05AC230                  | Ex tc IIIC              | T95°C               | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex ec IIC               | T1(<450°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1X10DC024                                   | Ex tc IIIC              | T105°C              | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1X10DC048                                   | Ex ec IIC               | T2(<300°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1X10AC115<br>D2xB1X10AC230                  | Ex tc IIIC              | T95°C               | -40°C ≤ Tamb ≤ +50°C                         |
| DZXD1X10A0200                                   | Ex ec IIC               | T3(<200°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2X05DC024                                   | Ex tc IIIC              | T75°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2X05DC048                                   | Ex ec IIC               | T3(<200°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2X05DC048<br>D2xC2X05AC115<br>D2xC2X05AC230 | Ex tc IIIC              | T95°C               | -40°C ≤ Tamb ≤ +50°C                         |
| BEXOE/(OO/(OEOO                                 | Ex ec IIC               | T2(<300°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2X10DC024                                   | Ex to IIIC              | T85°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2X10DC048                                   | Ex ec IIC               | T2(<300°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2X10DC040<br>D2xC2X10AC115<br>D2xC2X10AC230 | Ex tc IIIC              | T95°C               | -40°C ≤ Tamb ≤ +50°C                         |
| BEXOEXTOXOZOO                                   | Ex ec IIC               | T4(<135°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2LD2                                        | Ex tc IIIC              | T75°C               | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex ec IIC               | T4(<135°C)          | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2LD3                                        | Ex tc IIIC              | T75°C               | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 |                         |                     | -40 °C ≤ Tamb ≤ +50 °C                       |
| D2xJ1T                                          | Ex ec IIC<br>Ex tc IIIC | T6(<85°C)<br>T55°C  | -40 C ≤ Tamb ≤ +50 C<br>-40°C ≤ Tamb ≤ +50°C |
|                                                 |                         | T6(<85°C)           | -40 °C ≤ Tamb ≤ +50 °C                       |
| D2xJ1D                                          | Ex ec IIC               |                     |                                              |
|                                                 | Ex to IIIC              | T55°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1XH1                                        | Ex ec IIC               | T2(<300°C)          | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex tc IIIC              | T80°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D2xB1XH2                                        | Ex ec IIC               | T1 (<450°C)         | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex tc IIIC              | T105°C              | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2XH1                                        | Ex ec IIC               | T3(<200°C)          | -40°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex tc IIIC              | T75°C               | -40°C ≤ Tamb ≤ +50°C                         |
| D2xC2XH2                                        | Ex ec IIC<br>Ex tc IIIC | T2(<300°C)<br>T85°C | -40°C ≤ Tamb ≤ +50°C<br>-40°C ≤ Tamb ≤ +50°C |
|                                                 |                         | T3                  | -55°C ≤ Tamb ≤ +75°C                         |
| D2xL1                                           | Ex ec IIC               | T4                  | -55°C ≤ Tamb ≤ +50°C                         |
|                                                 | Ex tc IIC               | T109°C              | -55°C ≤ Tamb ≤ +75°C                         |
|                                                 | Ex ec IIC               | T3                  | -55°C ≤ Tamb ≤ +75°C                         |
| D2xL2                                           | Ex tc IIC               | T119°C              | -55°C ≤ Tamb ≤ +75°C                         |
|                                                 | Ex db ec IIC            | T6                  | -35 C ≤ Tamb ≤ +75 C<br>-40°C ≤ Tamb ≤ +50°C |
| D2xH1-E                                         | Ex to IIC               | T55°C               | -40 °C ≤ Tamb ≤ +50 °C                       |
|                                                 | EX IC IIC               | 133 0               | -40 C = Tallib = +30 C                       |

## Electrical data

| Model                          |         | Electrical Ratings         |    |                                                 |  |  |
|--------------------------------|---------|----------------------------|----|-------------------------------------------------|--|--|
|                                | DC      | DC AC Hz Max. Amps, mA, (W |    |                                                 |  |  |
| D2xS1DC024                     | 10-30   | -                          | -  | 313                                             |  |  |
| D2xS1DC048                     | 38-58   | -                          | -  | 218                                             |  |  |
| D2xS1AC115                     | -       | 103.5-126.5                | 60 | 91                                              |  |  |
| D2xS1AC230                     | -       | 207-253                    | 50 | 72                                              |  |  |
| D2xS2FDC024-A<br>D2xS2HDC024-A | 11.5-54 | -                          | -  | 12Vdc – 221mA<br>24Vdc – 185mA<br>48Vdc – 115mA |  |  |
| D2xS2FDC024-S                  | 20-28   | -                          | -  | 24Vdc – 185mA                                   |  |  |



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| Model                          | Electrical Ratings |                |            |                    |  |
|--------------------------------|--------------------|----------------|------------|--------------------|--|
|                                | DC                 | AC             | Hz         | Max. Amps, mA, (W) |  |
| D2xS2HDC024-S                  |                    |                |            |                    |  |
| D2xS2FAC230-A                  | -                  | 100-240        | 50/60      | 115Vac – 73mA      |  |
| D2xS2HAC230-A                  |                    |                |            | 230Vac – 48mA      |  |
| D2xC1X05DC024                  | 20-28              | -              | -          | 521                |  |
| D2xC1X05DC048                  | 42-58              | -              | -          | 328                |  |
| D2xC1X05AC115                  | -                  | 115-125        | 60         | 183                |  |
| D2xC1X05AC230                  | -                  | 215-250        | 50         | 77                 |  |
| D2xC1X10DC024                  | 20-28              | -              | -          | 876                |  |
| D2xC1X10DC048                  | 42-58              | -              | -          | 475                |  |
| D2xC1X10AC115                  | -                  | 115-125        | 60         | 343                |  |
| D2xC1X10AC230                  | -                  | 215-250        | 50         | 115                |  |
| D2xB1X05DC024                  | 20-28              | -              | -          | 296                |  |
| D2xB1X05DC048                  | 48                 | -              | -          | 145                |  |
| D2xB1X05AC115                  | -                  | 115-120        | 50/60      | 80                 |  |
| D2xB1X05AC230                  | -                  | 220-230        | 50/60      | 30                 |  |
| D2xB1X10DC024                  | 20-28              | -              | -          | 609                |  |
| D2xB1X10DC048                  | 48                 | -              | -          | 260                |  |
| D2xB1X10AC115                  | -                  | 115-120        | 50/60      | 185                |  |
| D2xB1X10AC230                  | -                  | 220-230        | 50/60      | 107                |  |
| D2xB1LD2DC024                  | 18-54              | -              | -          | 346                |  |
| D2xB1LD2AC115                  | -                  | 115-120        | 50/60      | 102.4              |  |
| D2xB1LD2AC230                  | -                  | 220-230        | 50/60      | 75                 |  |
| D2xB1LD3DC024                  | 16-33              | -              | -          | 528                |  |
| D2xC2X05DC024                  | 20-28              | -              | -          | 296+313            |  |
| D2xC2X05DC048                  | 48                 | _              | † <u>-</u> | 145+218            |  |
| D2xC2X05AC115                  | -                  | 115-120        | 50/60      | 80+91              |  |
| D2xC2X05AC230                  | -                  | 220-230        | 50/60      | 30+72              |  |
| D2xC2X10DC024                  | 20-28              | -              | -          | 609+313            |  |
| D2xC2X10DC048                  | 48                 | -              | † -        | 260+218            |  |
| D2xC2X10DC040                  | -                  | 115-120        | 50/60      | 185+91             |  |
| D2xC2X10AC113                  | +-                 | 220-230        | 50/60      | 107+72             |  |
| D2xC2LD2DC024                  | 24                 | -              | -          | 346+313            |  |
| D2xC2LD2DC024<br>D2xC2LD2DC048 | 48                 | +-             | †-         | 115+218            |  |
| D2xC2LD2DC046                  | -                  | 115-120        | 50/60      | 102.4+91           |  |
| D2xC2LD2AC113                  | -                  | 220-230        | 50/60      | 75+72              |  |
| D2xC2LD2AC230<br>D2xC2LD3DC024 | 16-33              | 220-230        | 1          | 528+250            |  |
| D2xJ1T                         | 54 Max             | 230 Max        | 50/60      | 10A Max            |  |
|                                |                    |                |            |                    |  |
| D2xJ1D<br>D2xB1XH1DC024        | 54 Max             | 230 Max        | 50/60      | 10A Max<br>296     |  |
|                                | 20-28              | <del>  -</del> | +          |                    |  |
| D2xB1XH2DC024                  | 20-28              | -              | -          | 609                |  |
| D2xC2XH1DC024                  | 20-28              | -              | -          | 449                |  |
| D2xC2XH2DC024                  | 20-28              | - 05 / 70      |            | 785                |  |
| D2xL1FV725                     | -                  | 25 / 70        | signal     | 15 W               |  |
| D2xL2FV725                     | -                  | 25 / 70        | signal     | 25 W               |  |
| D2xL2HV725                     | -                  | 25 / 70        | signal     | 25 W               |  |
| D2xL1FV100                     | -                  | 100            | signal     | 15 W               |  |
| D2xL2FV100                     | -                  | 100            | signal     | 25 W               |  |
| D2xL2HV100                     | -                  | 100            | signal     | 25 W               |  |
| D2xL1FR008                     | -                  | 10.95V Max     | signal     | 15 W               |  |
| D2xL1FR016                     | -                  | 15.49V Max     | signal     | 15 W               |  |
| D2xL2FR008                     | -                  | 10.95V Max     | signal     | 25 W               |  |
| D2xL2FR016                     | -                  | 15.49V Max     | signal     | 25 W               |  |
| D2xL2HR008                     | -                  | 10.95V Max     | signal     | 25 W               |  |
| D2xL2HR016                     | -                  | 15.49V Max     | signal     | 25 W               |  |

# **Electrical Ratings Heat Detector:**

| Model   | Voltage        | Current | Power       |
|---------|----------------|---------|-------------|
|         | 32Vac, 50/60Hz | 5.0A    |             |
| D2xH1-E | 32Vdc          | 1A      | 1.25 W, max |
|         | 24Vdc          | 2A      |             |



[14]

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#### Routine tests

- The xenon lamp assembly shall be routinely dielectrically strength tested. Tests shall be performed as described in EN 60079-7 clause 6.1 for a minimum of 1 second.
- All models shall be routinely dielectrically strength tested. The tests shall be performed as described in EN/IEC 60079-7, clause 6.1, at 1200Vac for a minimum of 1 second.
- 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 D2xH1-E shall be routinely dielectrically strength tested between live/neutral and earth/enclosure. The tests shall be
  performed as described in IEC 60079-7, clause 6.1, at 500V rms for at least 1 minute (or 600V rms for at least 100 ms).

## [16] <u>Test Report No. (associated with this certificate issue)</u>

The test report no. is provided under item no. [8] on page 1 of this Type Examination Certificate.

### [17] Specific conditions of use:

- 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.
- Not to be mounted with the horn facing upwards. Refer to Manufacturer's Instructions.
- The equipment shall only be used in end use with appropriately certified cable entry devices and blanking plugs.

Specific Conditions of Use for D2xB1LD\*\*\*\*\* and D2xC2LD\*\*\*\*\*\* , D2xB1XH1DC024, D2xB1XH2DC024, D2xC2XH1DC024 and D2xC2XH2DC024:

The equipment shall only be used in an area of at least pollution degree 2, as defined in EN 60664-1.

### Specific to D2xH1-E:

• End of line monitoring diode or an end of line monitoring resistor can be connected across the +ve and –ve terminals. These must maintain creepage and clearance distances to bare conductive parts at different potentials, of at least 1.8mm.

#### [18] Conditions of certification:

None

## [19] <u>Essential Health and Safety Requirements (Regulations Schedule 1)</u>

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

### Additional information

The D2xC1 sounder beacon, D2xB1 Beacon, D2xC2 sounder beacon, D2xJ1 Junction Box and D2xS1 sounder has in addition passed the tests for Ingress Protection to IP 66 in accordance with EN60529:1991+A1:2000+A2:2013.



The trademark

varning signals will be used as the company identifier on the marking label.

The manufacturer shall inform the certificate issuer concerning all modifications to the technical documentation as described in Section [20] Drawings and Documents of this document.



[14]

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# [20] <u>Drawings and Documents</u>

| Title:                                                                                                | Drawing No.:      | Rev.<br>Level: | Date:      |
|-------------------------------------------------------------------------------------------------------|-------------------|----------------|------------|
| D2xC1 Sounder / Beacon General Arrangement drawing.                                                   | D189-00-501-SC    | E              | 2015-01-28 |
| D2xS1 Sounder General Arrangement drawing.                                                            | D189-00-001-SC    | Е              | 2015-01-27 |
| Bare Board Layout D2xS1 Sounder Supply DC.                                                            | D189-20-001-SC    | В              | 2014-10-07 |
| Bare Board Layout D2xS1 Sounder Supply AC.                                                            | D189-21-051-SC    | В              | 2014-10-07 |
| PCB Bare Board Layout D2xS1 Sounder Control.                                                          | D189-22-001-SC    | В              | 2014-10-07 |
| PCB Bare Board Layout D2xC1 Beacon AC.                                                                | D189-21-551-SC    | В              | 2014-10-07 |
| PCB Bare Board Layout D2xC1 Beacon DC.                                                                | D189-20-501-SC    | В              | 2014-10-07 |
| D2x5J & D2x10J 24V and 48V DC Beacon Circuit Diagram.                                                 | D189-25-501-CD-SC | В              | 2013-07-22 |
| D2x5J & D2x10J 115V and 230V AC Beacon Circuit Diagram.                                               | D189-36-551-CD-SC | С              | 2014-07-17 |
| D2x 24V/48V DC and 115/230 AC Sounder Control Circuit Diagram.                                        | D189-26-001-CD-SC | В              | 2014-07-17 |
| D2x 24V & 48V DC Sounder Supply Circuit Diagram.                                                      | D189-26-061-CD-SC | С              | 2014-07-17 |
| D2x 115V & 230V AC Sounder Supply Circuit Diagram.                                                    | D189-36-051-CD-SC | В              | 2014-07-17 |
| D2xS1 24V DC/115V AC/230V AC Sounder Control (BOM)                                                    | D189-26-001-CL-SC | D              | 2014-01-14 |
| D2xS1 48V DC Sounder Control (BOM)                                                                    | D189-27-001-CL-SC | D              | 2014-01-14 |
| D2xS1 24V DC Supply Board (BOM)                                                                       | D189-26-061-CL-SC | E              | 2014-10-13 |
| D2xS1 48V DC Supply Board (BOM)                                                                       | D189-27-061-CL-SC | E              | 2014-10-13 |
| D2xS1 115V AC Supply - Sounder (BOM)                                                                  | D189-36-051-CL-SC | D              | 2014-10-13 |
| D2xS1 230V AC Supply - Sounder (BOM)                                                                  | D189-37-051-CL-SC | D              | 2014-10-13 |
| D2x5J 24Vdc Beacon PCBA (BOM)                                                                         | D189-26-501-CL-SC | E              | 2014-11-19 |
| D2x10J 24Vdc Beacon PCBA (BOM)                                                                        | D189-26-601-CL-SC | E              | 2014-11-19 |
| D2x5J 48Vdc Beacon PCBA (BOM)                                                                         | D189-27-501-CL-SC | E              | 2014-11-19 |
| D2x10J 48Vdc Beacon PCBA (BOM)                                                                        | D189-27-601-CL-SC | E              | 2014-11-19 |
| D2x5J 115V AC Beacon (BOM)                                                                            | D189-36-551-CL-SC | E              | 2014-11-19 |
| D2x10J 115V AC Beacon (BOM)                                                                           | D189-36-651-CL-SC | E              | 2014-11-19 |
| D2x5J 230V AC Beacon (BOM)                                                                            | D189-37-551-CL-SC | E              | 2014-11-19 |
| D2x10J 230V AC Beacon (BOM)                                                                           | D189-37-651-CL-SC | E              | 2014-11-19 |
| Prismatic Flash Dome                                                                                  | D24106            | Α              | 2009-07-03 |
| BExBG Beacon Glass Dome Guard                                                                         | D2489             | В              | 2002-01-04 |
| Pressure unit 8 & 16 Ohm                                                                              | D189-80-001-SC    | В              | 2015-01-27 |
| D2x Beacon board to housing clearance                                                                 | D189-95-001-SC    | Α              | 2014-10-08 |
| E2x Flash tube module Assembly Instructions                                                           | D4205             | Α              | 2003-10-16 |
| D2x Beacon Scheduled Drawing                                                                          | D211-00-001-SC    | F              | 2019-10-22 |
| D2x Beacon Scheduled Drawing (B1XH1DC024, B1XH2DC024, B1LD2DC024 and B1LD3DC024 only)                 | D211-00-251-SC    | С              | 2019-10-21 |
| D2x Combine Sounder/Beacon Scheduled Drawing                                                          | D211-00-601-SC    | D              | 2019-10-28 |
| D2x Combine Sounder/Beacon Scheduled Drawing (C2XH1DC024, C2XH2DC024, C2LD2DC024 and C2LD3DC024 only) | D211-00-651-SC    | С              | 2019-10-28 |
| D2x Junction Box Scheduled Drawing                                                                    | D211-00-501-SC    | В              | 2017-04-18 |
| PCB Bare Board Layout E2x / D2x Beacon DC                                                             | D209-20-201-SC    | С              | 2019-11-01 |
| PCB Bare Board Layout E2x / D2x Beacon AC                                                             | D209-21-201-SC    | С              | 2019-11-01 |
| E2xB05 & E2xB10 5J & 10J Xenon DC Beacon circuit Diagram                                              | D209-25-201-CD-SC | А              | 2016-09-13 |
| E2xB05 & E2xB10 5J & 10J Xenon DC Beacon (BOM)                                                        | D209-25-201-CL-SC | С              | 2019-10-31 |



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| Title:                                                                              | Drawing No.:         | Rev.<br>Level: | Date:      |
|-------------------------------------------------------------------------------------|----------------------|----------------|------------|
| E2xB05 & E2xB10 5J & 10J Xenon AC Beacon Circuit Diagram                            | D209-36-201-CD-SC    | А              | 2016-09-13 |
| E2xB05DC024 5J 24V DC (BOM)                                                         | D209-26-201-CL-SC    | D              | 2019-10-31 |
| E2xB05DC048 5J 48V DC (BOM)                                                         | D209-27-201-CL-SC    | D              | 2019-10-31 |
| E2xB05AC115 5J 115V AC (BOM)                                                        | D209-36-201-CL-SC    | D              | 2019-10-31 |
| E2xB05AC230 5J 230V AC (BOM)                                                        | D209-37-201-CL-SC    | С              | 2019-10-31 |
| E2xB10DC024 10J 24V DC (BOM)                                                        | D209-26-211-CL-SC    | С              | 2019-10-31 |
| E2xB10DC048 10J 48V DC (BOM)                                                        | D209-27-211-CL-SC    | С              | 2019-10-31 |
| E2xB10AC115 10J 115V AC (BOM)                                                       | D209-36-211-CL-SC    | С              | 2019-10-31 |
| E2xB10AC230 10J 230V AC (BOM)                                                       | D209-37-211-CL-SC    | С              | 2019-10-31 |
| E2x Flash Tube Module Assembly Instructions                                         | D209-15-201-SC       | Α              | 2016-11-10 |
| UL PCB Bare Board Layout D2x/E2x LED Tower PCB's                                    | D209-20-401-SC       | Α              | 2016-05-09 |
| UL PCB Bare Board Layout D2x/E2x LED Controller Module PCB                          | D209-20-405-SC       | Α              | 2016-05-09 |
| UL PCB Bare Board Layout D2x 24VDC LED Controller Module PCB                        | D209-20-415-SC       | Α              | 2017-03-27 |
| UL PCB Bare Board Layout D2x/E2x LED Power/Input PCB                                | D209-22-401-SC       | В              | 2017-04-24 |
| E2x LED Beacon Power Supply PCBA                                                    | D209-26-401-CD-SC    | Α              | 2016-05-18 |
| E2x LED Beacon Controller module PCBA                                               | D209-26-405-CD-SC    | Α              | 2016-05-18 |
| D2x LED Beacon DC Controller Module PCBA                                            | D209-26-415-CD-SC    | Α              | 2017-02-18 |
| E2x LED DC Power PCBA (BOM)                                                         | D209-26-401-CL-SC    | D              | 2019-10-31 |
| D2x/E2x LED Controller Module PCBA (BOM)                                            | D209-26-405-CL-SC    | В              | 2017-03-20 |
| D2x LED DC Controller Module PCBA (BOM)                                             | D209-26-415-CL-SC    | С              | 2017-06-12 |
| E2x LED 115VAC Power PCBA (BOM)                                                     | D209-36-401-CL-SC    | С              | 2019-10-31 |
| E2x LED 230VAC Power PCBA (BOM)                                                     | D209-37-401-CL-SC    | С              | 2019-10-31 |
| D2xB1 LED PCBA Sub-Assy                                                             | D211-15-451-SC       | С              | 2019-10-25 |
| PCB Bare Board Layout D2xB1XH1, XH2 Xenon Beacon DC – UL1971                        | D211-20-251-SC       | Α              | 2017-05-31 |
| UL PCB Bare Board Layout D1x/D2x 24VDC Xenon Controller – UL 1971                   | D211-20-261-SC       | А              | 2017-05-31 |
| D2x B1XH1, XH2 5J & 10J – UL 1971 24VDC Circuit Diagram                             | D211-26-251-CD-SC    | С              | 2019-06-21 |
| D2xB1XH2 Xenon 10J 24VDC – UL1971                                                   | D211-26-251-CL-SC    | С              | 2019-09-04 |
| D2xB1XH1 Xenon 5J 24VDC – UL1971                                                    | D211-26-255-CL-SC    | С              | 2019-09-04 |
| D1x - D2x Beacon Control Board - UL1971                                             | D211-26-261-CL-SC    | В              | 2017-06-15 |
| D2xB1 LD3 PCBA assembly                                                             | D219-15-451-SC       | В              | 2019-08-29 |
| D2xB2LD3 Pulse LED Driver PCBA schematics                                           | D219-26-451-CD-SC    | В              | 2019-02-11 |
| D2xB2LD3 Pulse LED Driver PCBA (BoM)                                                | D219-26-451-CL-SC    | В              | 2019-11-18 |
| D2xB2LD3 Pulse LED Tower PCBA (BoM)                                                 | D219-28-461-CL-SC    | Α              | 2019-01-22 |
| D2xS1 Alarm Horn instructions                                                       | D189-00-001-IS-SC-UK | Α              | 2022-03-31 |
| D2xC1X05 / D2xC1X10 Alarm Horn / Strobe instructions                                | D189-00-501-IS-SC-UK | Α              | 2022-03-31 |
| D2xC1 Sounder/Beacon Product Labels                                                 | D189-99-501-SC-UK    | Α              | 2022-03-31 |
| D2xS1 UL Scheduled Sounder Product Labels                                           | D189-99-001-SC-UK    | Α              | 2022-03-31 |
| Instruction Manual D2xB1X05 & D2xB1X10 Xenon Beacons For use in Hazardous Locations | D211-00-201-IS-SC-UK | А              | 2022-03-31 |
| Instruction Manual D2xB1LD2 LED Beacons For use in Hazardous Location               | D211-00-401-IS-SC-UK | Α              | 2022-03-31 |
| Instruction Manual D2xJ1T & D2xJ1D Junction Box For use in Hazardous Locations      | D211-00-501-IS-SC-UK | А              | 2022-03-31 |



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| Title:                                                                                                                | Drawing No.:           | Rev.<br>Level: | Date:      |
|-----------------------------------------------------------------------------------------------------------------------|------------------------|----------------|------------|
| Instruction & Service Manual D2xC2 Alarm Horn and Strobe For use in Hazardous Locations                               | D211-00-601-IS-SC-UK   | А              | 2022-03-31 |
| Instruction & Service Manual D2xC2 Alarm Horn and LED for use in Hazardous Locations                                  | D211-00-611-IS-SC-UK   | А              | 2022-03-31 |
| D2x Scheduled Product Labels                                                                                          | D211-99-001-SC-UK      | Α              | 2022-03-31 |
| Instruction Manual D2xB1XH1 & D2xB1XH2 Xenon Beacons for Use in Hazardous Locations                                   | D211-00-251-IS-SC-UK   | A              | 2022-03-31 |
| Instruction & Service Manual D2xC2XH1 & D2xC2XH2 UL1971 Alarm<br>Horn and Xenon Beacon for Use in Hazardous Locations | D211-00-651-IS-SC-UK   | А              | 2022-03-31 |
| Instruction Manual D2xB1LD3 LED Beacons For use in Hazardous Location                                                 | D211-00-471-IS-SC-UK   | А              | 2022-03-31 |
| Instruction Manual D2xC2LD3 LED Beacons For use in Hazardous Location                                                 | D211-00-671-IS-SC-UK   | А              | 2022-03-31 |
| D2xL1 & D2xL2 Loudspeaker range GA                                                                                    | D252-00-201-SC         | Α              | 06/02/2022 |
| D2xL1 & D2xL2 Loudspeaker range Instructions                                                                          | D252-00-201-IS-SC-ATEX | Α              | 2023-10-12 |
| D1xL1 & D1xL2 line in & low impedance loudspeaker wiring diagrams                                                     | D190-06-201            | 2              | 08/02/2023 |
| 70V line audio matching transformer 25W                                                                               | D206-80-001-SC         | А              | 09-10-2015 |
| 70V line audio matching transformer 15W                                                                               | D206-80-101-SC         | А              | 09-10-2015 |
| 100V line audio matching transformer 25W                                                                              | D2418                  | В              | 04/09/2001 |
| 100V line audio matching transformer 15W                                                                              | D2419                  | В              | 04/09/2001 |
| Loudspeaker PCB Layout V100                                                                                           | D243-22-001-SC-UL      | Α              | 2023-10-10 |
| Loudspeaker PCB Layout V725                                                                                           | D243-22-101-SC-UL      | Α              | 2023-10-10 |
| D1xL Line Transformer 15W 70/25V Line                                                                                 | D243-80-175            | 1              | 20/06/2023 |
| D1xL Line Transformer 25W 70/25V Line                                                                                 | D243-80-275            | 1              | 20/06/2023 |
| BExLD and BExLE Low impedance loudspeaker PCB assembly                                                                | D2482                  | Α              | 05/01/2000 |
| D2xL2 70/25V (worst case) minimum clearances pcb to housing                                                           | SK0680                 | А              | 20/04/2023 |
| D2xL* Label drawing                                                                                                   | D252-99-201-SC         | А              | 2023-10-12 |
| D2xS2 DC board schematics – GLOBAL A112N/A121 DC SOUNDER CIRCUIT DIAGRAM                                              | D221-28-001-CD-SC      | D              | 2023-04-28 |
| D2xS2 DC board – COMPONENT LIST                                                                                       | D221-28-001-CL-SC      | С              | 2023-04-21 |
| D2xS2 Power Amp board – GLOBAL A112N/A121 CLASS D POWER AMPLIFIER CIRCUIT DIAGRAM                                     | D221-28-051-CD-SC      | В              | 2020-07-09 |
| D2xS2 Power Amp board – COMPONENT LIST                                                                                | D221-28-051-CL-SC      | С              | 2023-04-24 |
| D2xS2 AC board schematics – GLOBAL A112N/A121 DC SOUNDER CIRCUIT DIAGRAM                                              | D221-38-001-CD-SC      | С              | 2023-04-25 |
| D2xS2 AC board – COMPONENT LIST                                                                                       | D221-38-001-CL-SC      | С              | 2023-04-19 |
| D2xS2 Terminal board – COMPONENT LIST                                                                                 | D190-26-081-CL         | 2              | 2022-05-03 |
| D2xS2 SOUNDER GA SCHEDULED DRAWING                                                                                    | D252-00-001-SC         | А              | 2023-02-15 |
| D2xS2 (WORST CASE) MINIMUM CLEARANCES PCB TO HOUSING                                                                  | SK0685                 | А              | 2023-07-04 |
| D2xS2 Label drawing                                                                                                   | D252-99-001-SC         | Α              | 2023-09-21 |
| D2xS2 Instructions                                                                                                    | D252-00-001-IS-SC      | Α              | 2023-09-27 |
| D2x H1-E Ex d e HEAT DETECTOR PRODUCT LABEL<br>ATEX/IECEx/UKEx                                                        | D255-99-331-SC         | А              | 2024-04-12 |
| D2xH1-E Ex e HEAT DETECTOR                                                                                            | D255-00-331-SC         | А              | 2024-04-12 |
| Instruction Manual D2xH1-E Heat Detector ATEX / IECEx / UKEx Zone 2, 22                                               | D255-00-331-IS-SC      | А              | 2024-04-12 |
|                                                                                                                       |                        |                | <u> </u>   |

