

# D1xS1F 115dB(A) Alarm Horn Sounder

The D1xS1F is a high performance globally certified alarm horn sounder featuring a sound output of up to 115dB(A). The robust Type 4/4X, IP66 marine grade, corrosion proof aluminium enclosure is approved for Class I & II Div 1, Zone 1 & 20, IECEx and ATEX Zone 1, 2, 21 & 22 explosion proof signalling applications.

Featuring 64 alarm tones with 4 remotely activated stage/channels. The threaded flameproof joint, multiple cable entries and duplicated, pluggable termination simplifies both installation and routine maintenance. The 24Vdc version is EN54-3 EU, UK CPR, MED and MER compliant, plus UL464 NFPA compliant for public mode fire alarm use. SIL1 & SIL2 Route 2H to IEC61508 (2010), with optional diagnostics for Route 1H SIL2 compliance.

## Features

- Maximum sound pressure level output of 115dB(A)
- Choice of 64 alarm tone frequencies
- 4 remotely selectable alarm stages/channels
- Positive or negative line stage/channel switching
- Automatic synchronisation on multi-sounder system
- Ratchet adjustable 316 stainless steel bracket
- Triple cable entries
- Robust marine grade aluminium enclosure
- EN54-3 tested – EU & UK CPR compliant
- UL464 Public mode fire alarm use
- CAN/ULC S525 Audible Signaling Devices for Fire Alarm

## Approvals

- UL/cUL/ULC File ref: E230764
- IECEx certificate: IECEx ULD 19.0008X
- ATEX certificate: DEMKO 19 ATEX 2141X
- CSFM listing: 7136-2279:0506
- UKCA certificate: UL21UKEX2132X
- CCCEx certificate: 2022122310115173
- EU CPR certificate: 2831-CPR-F4858
- UK CPR certificate: 0832-UKCA-CPR-F1782
- MED, MER certificate: MEDB000085K, MERB000085K
- INMETRO IEx 24.0158X
- DNV certificate: TAA00003HM
- SIL1 & SIL2 compliant to IEC61508 (2010)

## Coding

- NEC / CEC Class / Zone  
Class I Zone 1 IIC T5 Ta -55°C to +85°C (T6 +75°C)
- NEC / CEC Class / Div  
Class I Div 1 ABCD T5 Ta -55°C to +85°C (T6 +75°C)
- IECEx / ATEX  
II 2G Ex db IIC T5 Gb Ta -55°C to +75°C (T6 +70°C)  
II 2D Ex tb IIIC T82°C Db Ta -55°C to +75°C
- Product version: D: NEC / CEC Class / Zone  
Zone 20 IIIB Ta -55°C to +70°C
- Version: D: Class II Div 1 FG T6 Ta -55°C to +70°C  
See product manual for full voltage specific coding.



## Specification

|                         |                                                                                                                                                                         |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum output:         | 115dB(A) @ 1 metre [106dB(A) @ 10ft/3m]<br>Class II version: 98dB(A) @ 1 metre [88dB(A) @ 10ft/3m]                                                                      |
| Nominal output:         | 110dB(A) @ 1m +/- 3dB – Tone 4 [101dB(A) @ 10ft/3m]<br>Class II version: 94dB(A) @ 1 metre [84dB(A) @ 10ft/3m]                                                          |
| No. of tones:           | 64 (UK00A / PFEER compliant)                                                                                                                                            |
| No. of stages:          | 4                                                                                                                                                                       |
| Volume control:         | Full range                                                                                                                                                              |
| Effective range:        | 125m/410ft @ 1KHz                                                                                                                                                       |
| Voltages DC:            | 24Vdc (11.5-54Vdc)                                                                                                                                                      |
| Voltages AC:            | 230Vac (100-240Vac)                                                                                                                                                     |
| In-rush:                | 815mA within 4ms @ 24Vdc                                                                                                                                                |
| Stage switching:        | DC units: positive or negative<br>AC units: common supply line                                                                                                          |
| Safety Integrity Level: | Product version A: SIL1 and SIL2 Route 2H<br>Product version S: SIL2 Route 1H with diagnostics SFF: >99%<br>See install manual for reliability & functional safety data |
| Ingress protection:     | EN60529: IP66/67<br>UL50E / NEMA250: 4 / 4X / 3R / 13                                                                                                                   |
| Enclosure material:     | Marine grade LM6 aluminium alloy                                                                                                                                        |
| Enclosure colour:       | Red or Grey, custom colours available on request                                                                                                                        |
| Enclosure finish:       | Chromate & powder coated finish                                                                                                                                         |
| Cable entries:          | 1×1/2"NPT & 2xM20<br>Thread adaptors available                                                                                                                          |
| Stopping plugs:         | Brass, Nickel Plated or Stainless Steel                                                                                                                                 |
| Terminals:              | 0.5 – 2.5mm <sup>2</sup> (20-14AWG) – 12AWG solid core conductor<br>Pluggable & duplicated terminals                                                                    |
| Line monitoring:        | Blocking diode included<br>EOL Min. 500 Ohm 2W, or 3k3 Ohm 0.5W resistor<br>or diode (DC versions) can be fitted                                                        |
| Ground/Earth stud:      | M5                                                                                                                                                                      |
| Enclosure volume:       | <2 litres                                                                                                                                                               |
| Installation temp:      | -55 to +85°C [-67° to +185°F]                                                                                                                                           |
| Storage temp:           | -55 to +85°C [-67° to +185°F]                                                                                                                                           |
| Relative humidity:      | 99%                                                                                                                                                                     |
| Vibration test:         | 35Hz for a duration 4Hr (UL464)                                                                                                                                         |
| Jarring test:           | 3ft/lb Energy (UL464)                                                                                                                                                   |
| Impact test:            | 3x 5lb (UL464)                                                                                                                                                          |
| MTBF DC:                | 225.16 years / 1,972,386 hours – MIL 217                                                                                                                                |
| MTBF AC:                | 138.96 years / 1,217,285 hours – MIL 217                                                                                                                                |
| Weight:                 | 4.00kg/8.80lbs                                                                                                                                                          |

### Accessories:

|              |                                       |
|--------------|---------------------------------------|
| SP65-0001-A4 | Pole Mount Bracket Kit St/St A4 (316) |
| SP65-0003-A4 | Sunshade - St/St A4 (316)             |

## Part Codes

| Part Code:                              | Identifier:                           | Description:                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product type:                           | D1xS1                                 | D1xS1 alarm horn sounder                                                                                                                                                                                                                                                                                                                                                      |
| Horn type:                              | F                                     | Flare re-entrant horn                                                                                                                                                                                                                                                                                                                                                         |
| Voltage:                                | DC024<br>AC230                        | 11.5-54Vdc<br>100-240Vac                                                                                                                                                                                                                                                                                                                                                      |
| Cable entries: [e]                      | A<br>B<br>C<br>D<br>F<br>G<br>Note:   | 2 x M20x1.5mm & 1 x 1/2"NPT<br>2 x 1/2"NPT - adaptors<br>2 x 3/4"NPT - adaptors<br>2 x M25x1.5mm - adaptors<br>1 x 3/4"NPT - adaptor<br>1 x M25x1.5mm - adaptor<br>All entries, excluding thread adaptors, supplied with stopping plugs installed.                                                                                                                            |
| Stopping plug/<br>adaptor material: [m] | B<br>N<br>S                           | Brass<br>Nickel plated brass<br>Stainless steel                                                                                                                                                                                                                                                                                                                               |
| Bracket material: [s]                   | 1<br>3<br>5                           | A4 316 Stainless Steel<br>A4 316 St/St with Equip. Tag<br>A4 316 St/St with Equip. Tag and Duty Label                                                                                                                                                                                                                                                                         |
| Product version: [v]                    | A<br><br>S<br><br>T<br><br>J<br><br>D | UL, cUL, ULC, IECEx, ATEX, PESO, CSFM, MED, MER, DNV, INMETRO SIL 1 & SIL 2 Route 2H<br><br>UL, cUL, ULC, IECEx, ATEX, PESO, CSFM, DNV SIL 2 Route 1H with diagnostics SFF: >99%<br><br>IECEx, ATEX, PESO, DNV, INMETRO Telephone/Relay initiate<br><br>CCCEX, UL, cUL, ULC, IECEx, ATEX, PESO, CSFM, MED, MER, DNV, INMETRO SIL 1 & SIL 2 Route 2H<br><br>Class II - UL, cUL |
| Product option: [o]                     | 1<br>Z<br>X<br>Y<br>K<br>V            | Standard product<br>Custom alarm tone software - contact E2S<br>Custom configuration - contact E2S<br>Stage control Config. 4<br>Stage control Config. 5 (DC) and Config. 2 (AC)<br>Stage control Config. 6                                                                                                                                                                   |
| Enclosure colour: [x]                   | R<br>G<br>S                           | Red<br>Grey<br>Special colour - contact E2S                                                                                                                                                                                                                                                                                                                                   |

**Note:** For UK & EU CPR, MED, MER compliant 24Vdc variant, select product version A and product option 1

**Alarm stage control:** Please review the installation manual and wiring schematics for remote stage control and EOL resistor monitoring configuration options:

Config. 1 [DC]: Factory default. Common negative, positive switching. Up to 4 Alarm Stages. EOL monitoring Alarm Stage 1 only

Config. 2 [DC]: User setting. Common positive, negative switching. Up to 4 Alarm Stages. EOL monitoring Alarm Stage 1 only

|                 |                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Config. 3 [DC]: | User setting. Common negative, positive switching activation of Alarm Stages 1 & 2 with EOL on both stages. Reverse polarity monitoring |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| Config. 4 [DC]: | Product option 'Y'. Independent activation of Alarm Stages 1 & 2 with EOL on both stages. Forward polarity monitoring |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|

Config. 5 [DC]: Product option 'K'. Horn continuously powered. Voltage free activation of up to 3 alarm stages

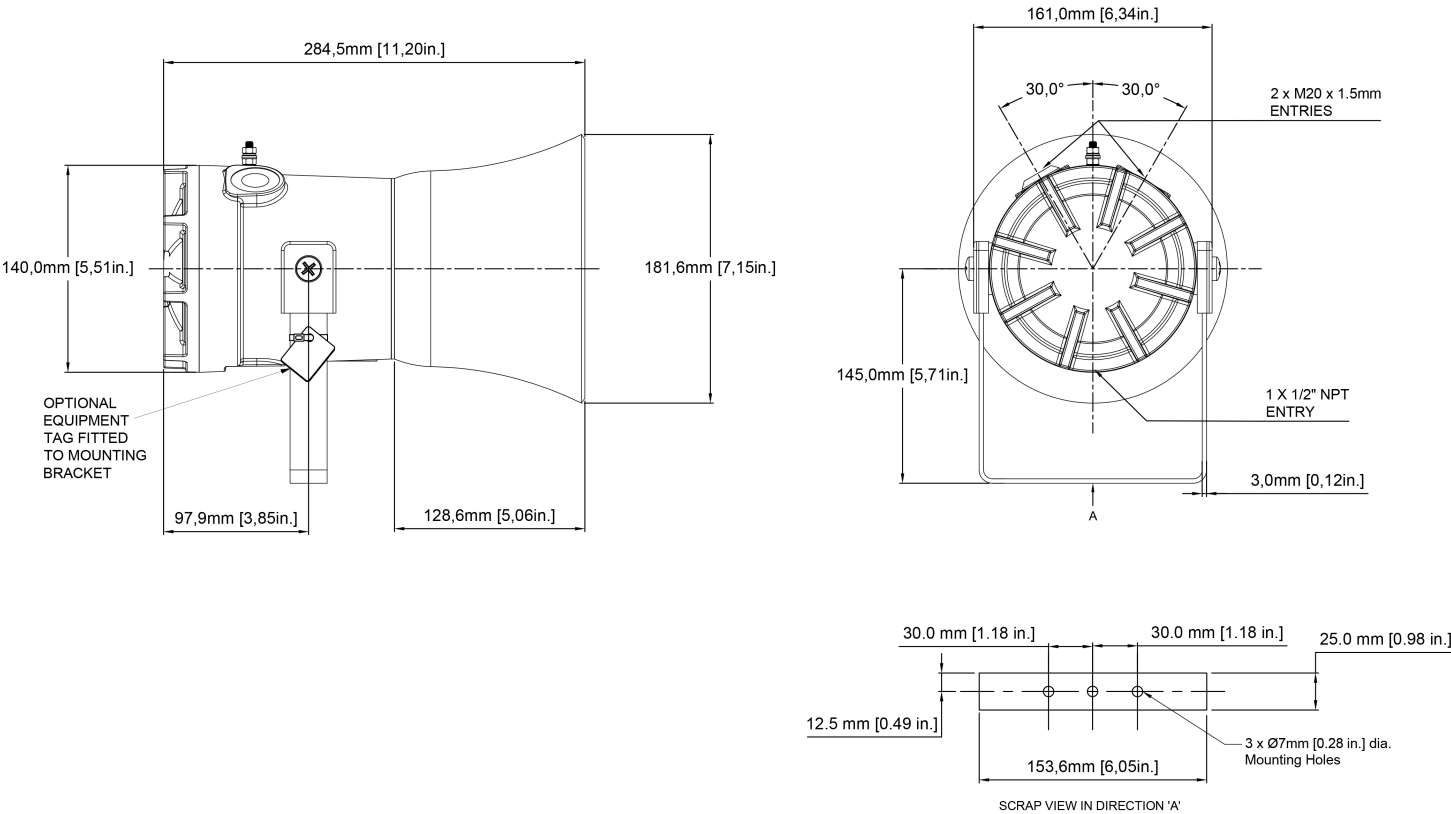
|                 |                                                                                                                        |
|-----------------|------------------------------------------------------------------------------------------------------------------------|
| Config. 6 [DC]: | Product option 'V'. Independent activation of up to 4 Alarm Stages with EOL on all stages. Forward polarity monitoring |
|-----------------|------------------------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------|
| Config. 1 [AC]: | Factory default. Up to 4 Alarm Stages. Stage 1 activated at power on. Stages 2, 3 and 4 via volt free contacts |
|-----------------|----------------------------------------------------------------------------------------------------------------|

|                 |                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------|
| Config. 2 [AC]: | Product option 'K'. Horn continuously powered. Voltage free activation of up to 3 alarm stages |
|-----------------|------------------------------------------------------------------------------------------------|

Current Consumption

| Nominal Voltage: | Voltage range: | Nominal current: | Max. current: | In-rush:   |
|------------------|----------------|------------------|---------------|------------|
| 12Vdc            | 11.5-54Vdc     | 221mA            | 221mA         | -          |
| 24Vdc            | 11.5-54Vdc     | 185mA            | 221mA         | 815mA <4ms |
| 48Vdc            | 11.5-54Vdc     | 115mA            | 221mA         | -          |
| 115Vac 50/60Hz   | 100-260V ac    | 73mA             | 80mA          | -          |
| 230Vac 50/60Hz   | 100-260V ac    | 48mA             | 80mA          | -          |



Assemblies

The D1xS1F is available as a plated assembly configured with Xenon strobe or LED beacons with or without a D1xJ2 Ex d junction box. Contact E2S for further information.

Tone table

| S 1  | Description                                      | S 2 | S 3  | S 4  |
|------|--------------------------------------------------|-----|------|------|
| T 1  | 1000 Continuous - PFEER Toxic Gas                | Any | T 2  | T 44 |
| T 2  | 1200/500 @ 1Hz Sweeping - DIN / PFEER P.T.A.P.   | Any | T 3  | T 44 |
| T 3  | 1000 @ 0.5Hz (1s on, 1s off) Intermittent - P... | Any | T 2  | T 44 |
| T 4  | 1.4KH-1.6KHz 1s, 1.6KHz-1.4KHz 0.5s - NF C 48... | Any | T 24 | T 1  |
| T 5  | 544(100mS)/440 (400mS) - NF S 32-001             | Any | T 19 | T 1  |
| T 6  | 1500/500 - (0.5s on , 0.5s off) x3 + 1s gap -... | Any | T 44 | T 1  |
| T 7  | 500-1500Hz Sweeping 2 sec on 1 sec off - AS4428  | Any | T 44 | T 1  |
| T 8  | 500/1200Hz @ 0.26Hz(3.3s on, 0.5s off) - NEN ... | Any | T 24 | T 35 |
| T 9  | 1000 (1s on, 1s off)x7 + (7s on, 1s off) - IM... | Any | T 34 | T 1  |
| T 10 | 1000 (1s on, 1s off)x7 + (7s on, 1s off) - IM... | Any | T 34 | T 1  |
| T 11 | 420(0.5s on, 0.5s off)x3 + 1s gap - ISO 8201 ... | Any | T 1  | T 8  |
| T 12 | 1000(0.5s on, 0.5s off)x3 + 1s gap - ISO 8201... | Any | T 1  | T 8  |
| T 13 | 422/775 - (0.85 on, 0.5 off) x3 + 1s gap - ...   | Any | T 1  | T 8  |
| T 14 | 1000/2000 @ 1Hz - Singapore                      | Any | T 3  | T 35 |
| T 15 | 300 Continuous                                   | Any | T 24 | T 35 |
| T 16 | 440 Continuous                                   | Any | T 24 | T 35 |
| T 17 | 470 Continuous                                   | Any | T 24 | T 35 |
| T 18 | 500 Continuous - IMO code 2 (Low)                | Any | T 24 | T 35 |
| T 19 | 554 Continuous                                   | Any | T 24 | T 35 |
| T 20 | 660 Continuous                                   | Any | T 24 | T 35 |
| T 21 | 800 Continuous - IMO code 2 (High)               | Any | T 24 | T 35 |
| T 22 | 1200 Continuous                                  | Any | T 24 | T 35 |
| T 23 | 2000 Continuous                                  | Any | T 3  | T 35 |
| T 24 | 2400 Continuous                                  | Any | T 20 | T 35 |
| T 25 | 440 @ 0.83Hz (0.60s on, 0.60s off) Intermittent  | Any | T 44 | T 8  |
| T 26 | 470 @ 0.9Hz (0.55s on, 0.55s off) Intermittent   | Any | T 44 | T 8  |
| T 27 | 470 @ 5Hz (0.10s on, 0.10s off) Intermittent     | Any | T 44 | T 8  |
| T 28 | 544 @ 1.14Hz (0.43s on, 0.44s off) Intermittent  | Any | T 24 | T 8  |
| T 29 | 655 @ 0.875Hz (0.57s on, 0.57s off) Intermittent | Any | T 44 | T 8  |
| T 30 | 660 @ 0.28Hz (1.80s on, 1.80s off) Intermittent  | Any | T 24 | T 8  |
| T 31 | 660 @ 3.3Hz (0.15s on, 0.15s off) Intermittent   | Any | T 24 | T 8  |
| T 32 | 745 @ 1Hz (0.50s on, 0.50s off) Intermittent     | Any | T 24 | T 8  |

| S 1  | Description                                     | S 2 | S 3  | S 4  |
|------|-------------------------------------------------|-----|------|------|
| T 33 | 800 (0.25s on, 1.00s off) Intermittent          | Any | T 24 | T 8  |
| T 34 | 800 @ 2Hz (0.25s on, 0.25s off) - IMO code 3... | Any | T 24 | T 8  |
| T 35 | 1000 @ 1Hz (0.50s on, 0.50s off) Intermittent   | Any | T 24 | T 8  |
| T 36 | 2400 @ 1Hz (0.50s on, 0.50s off) Intermittent   | Any | T 24 | T 8  |
| T 37 | 2900 @ 5Hz (0.10s on, 0.10s off) Intermittent   | Any | T 24 | T 8  |
| T 38 | 363/518 @ 1Hz (0.50s / 0.50s) Alternating       | Any | T 8  | T 19 |
| T 39 | 450/500 @ 2Hz (0.25s / 0.25s) Alternating       | Any | T 8  | T 19 |
| T 40 | 554/440 @ 1Hz (0.50s / 0.50s) Alternating       | Any | T 24 | T 19 |
| T 41 | 554/440 @ 0.65Hz (0.76s / 0.76s) Alternating    | Any | T 8  | T 19 |
| T 42 | 561/760 @ 0.83Hz (0.60s / 0.60s) Alternating    | Any | T 8  | T 19 |
| T 43 | 780/600 @ 0.96Hz (0.52s / 0.52s) Alternating    | Any | T 8  | T 19 |
| T 44 | 800/1000 @ 2Hz (0.25s / 0.25s) Alternating      | Any | T 24 | T 19 |
| T 45 | 970/800 @ 2Hz (0.25s / 0.25s) Alternating       | Any | T 8  | T 19 |
| T 46 | 800/1000 @ 0.875Hz (0.57s / 0.57s) Alternating  | Any | T 24 | T 19 |
| T 47 | 2400/2900 @ 2Hz (0.25s / 0.25s) Alternating     | Any | T 24 | T 19 |
| T 48 | 500/1200 @ 0.3Hz (1.67s / 1.67s) Sweeping       | Any | T 24 | T 12 |
| T 49 | 560/1055 @ 0.18Hz (2.73s / 2.73s) Sweeping      | Any | T 24 | T 12 |
| T 50 | 560/1055 @ 3.3Hz (0.15s / 0.15s) Sweeping       | Any | T 24 | T 12 |
| T 51 | 600/1250 @ 0.125Hz (4s / 4s) Sweeping           | Any | T 24 | T 12 |
| T 52 | 660/1200 @ 1Hz (0.50s / 0.50s) Sweeping         | Any | T 24 | T 12 |
| T 53 | 800/1000 @ 1Hz (0.50s / 0.50s) Sweeping         | Any | T 24 | T 12 |
| T 54 | 800/1000 @ 7Hz (0.07s / 0.07s) Sweeping         | Any | T 24 | T 12 |
| T 55 | 800/1000 @ 50Hz (0.01s / 0.01s) Sweeping        | Any | T 24 | T 12 |
| T 56 | 2400/2900 @ 7Hz (0.07s / 0.07s) Sweeping        | Any | T 24 | T 12 |
| T 57 | 2400/2900 @ 1Hz (0.50s / 0.50s) Sweeping        | Any | T 24 | T 12 |
| T 58 | 2400/2900 @ 50Hz (0.01s / 0.01s) Sweeping       | Any | T 24 | T 12 |
| T 59 | 2500/3000 @ 2Hz (0.25s / 0.25s) Sweeping        | Any | T 24 | T 12 |
| T 60 | 2500/3000 @ 7.7Hz (0.65s / 0.65s) Sweeping      | Any | T 24 | T 12 |
| T 61 | 800Hz Motor Siren                               | Any | T 24 | T 12 |
| T 62 | 1200Hz Motor Siren                              | Any | T 24 | T 12 |
| T 63 | 2400Hz Motor Siren                              | Any | T 24 | T 12 |
| T 64 | Simulated Bell                                  | Any | T 21 | T 12 |