1-22-180 / STEx: Stainless Steel explosion/flameproof

# STExS1F Alarm Horn Sounder

**The STExS1F is a UL, cUL, IECEx and ATEX certified alarm horn sounder featuring a re-entrant flare horn. The robust 316L stainless steel enclosure is approved for Zone 1, 2, 21 & 22 explosion proof signalling applications.**

Featuring 64 alarm tone sounds, each of the available 4 stage/channels can be remotely triggered. Class D amplification provides a high sound output at optimum operating current. The threaded flameproof joint, multiple cable entries and duplicated, pluggable termination simplifies both installation and routine maintenance. SIL1 & SIL2 Route 2H compliant to IEC61508 (2010) as standard, with optional diagnostic module for Route 1H SIL2 compliance. DNV type approved for exposed locations.

## 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
- Available with custom tone configurations and frequencies
- Robust corrosion proof 316L stainless steel enclosure
- DNV type approved IEC 60945 & DNVGL-CG-0339

## Approvals

- UL/cUL/ULC – File ref: E230764
- IECEx ULD 16.0017X
- ATEX DEMKO 16 ATEX 1466X
- UKCA certificate: UL21UKEX2019X
- TR-CU Ex EAC certificate: RU C-GB.HA65.B.01252_21
- INMETRO IEx 20.0156X
- DNV type approved: TAA00001JN
- PESO CCOE certified: P622994
- SIL1 & SIL2 compliant to IEC61508 (2010)

## Coding

- NEC / Class / Zone
  Class I Zone 1 AEx db IIC T5 Ta -50°C to +70°C
  Class I Zone 1 AEx db IIC T6 Ta -50°C to +65°C
- CEC / Class / Zone
  Class I Zone 1 Ex db IIC T5 Ta -50°C to +70°C
  Class I Zone 1 Ex db IIC T6 Ta -50°C to +65°C
- NEC / CEC Class / Div
  Class I Div 2 ABCD T5 Ta -50°C to +70°C
  Class I Div 2 ABCD T6 Ta -50°C to +65°C
- IECEx / ATEX
  II 2G Ex db IIC Gb T5 Ta -50°C to +70°C
  II 2G Ex db IIC Gb T6 Ta -50°C to +65°C
  II 2D Ex tb IIIC Db T85°C Ta -50°C to +70°C

## Specification

| | |
|---|---|
| Maximum output: | 115dB(A) @ 1 m +/- 3dB [106dB(A) @ 10ft/3m +/- 3dB] |
| Nominal output: | 110dB(A) @ 1m +/- 3dB [101dB(A) @ 10ft/3m] +/- 3dB |
| No. of tones: | 64 (UKOOA / 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 |
| Enclosure material: | 316L Stainless Steel |
| Enclosure colour: | Red |
| Enclosure finish: | Chromate & powder coated finish<br>ISO 12944-6 CX, C5VH & C5H |
| Cable entries: | 3 x M20x1.5mm<br>Stopping plugs included |
| Stopping plugs: | Stainless Steel |
| Terminals: | 0.5 – 2.5mm² (20-14 AWG)<br>Pluggable & duplicated terminals |
| Line monitoring: | Diode polarized for use in supervised circuits<br>Blocking diode for reverse polarity monitoring |
| Ground/Earth stud: | M5 |
| Line monitoring: | Blocking diode included<br>EOL Min. 500 Ohm 2W, or 3k3 Ohm 0.5W resistor or diode (DC versions) can be fitted |
| Enclosure volume: | <2 litres |
| Installation temp: | -50° to +70°C (-58°F to +158°F) |
| Storage temp: | -50° to +70°C (-58°F to +158°F) |
| Relative humidity: | 99% |
| MTBF DC: | 93.92 years / 822,706 hours – MIL 217 |
| MTBF AC: | 46.66 years / 408,508 hours – MIL 217 |
| Weight: | 6.25kg/13.75lbs |

## Part Codes

| Part Code: | Identifier: | Description: |
|---|---|---|
| Product type: | STExS1 | STExS1 alarm horn sounder |
| Horn type: | F | Flare re-entrant horn |
| Voltage: | DC024 | 11.5-54Vdc |
| | AC230 | 100-240Vac |
| Cable entries:[e] | A | 3 x M20x1.5mm |
| | B | 2 × 1/2" NPT – adaptors |
| | C | 2 × 3/4" NPT – adaptors |
| | D | 2 x M25x1.5mm – adaptors |
| | E | 1 × 1/2" NPT – adaptor |
| | F | 1 × 3/4" NPT – adaptor |
| | G | 1 x M25x1.5mm – adaptor |
| Stopping plug/ adaptor material: [m] | S | Stainless steel |
| Bracket material: [s] | 1 | A4 316 Stainless Steel |
| | 3 | A4 316 St/St with Equip. Tag |
| Product version: [v] | A | UL, cUL, ULC, IECEx, ATEX, DNV, Ex EAC INMETRO SIL1 & SIL2 Route 2H |
| | S | UL, cUL, ULC, IECEx, ATEX, Ex EAC, INMETRO SIL2 Route 1H with diagnostics SFF: >99% |
| | T | IECEx, ATEX, Ex EAC, INMETRO Telephone/Relay initiate – 100-260Vac or 10-30Vdc supply only |
| Product option: [o] | 1 | Standard product |
| | Z | Custom alarm tone software – contact E2S |
| | X | Custom configuration – contact E2S |
| | Y | Stage control Config. 4 |
| | K | Stage control Config. 5 (DC) and Config. 2 (AC) |
| | V | Stage control Config. 6 |
| Enclosure colour: [x] | R | Red |
| | S | Special – contact E2S for alternative enclosure colours |

**Accessories:**

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

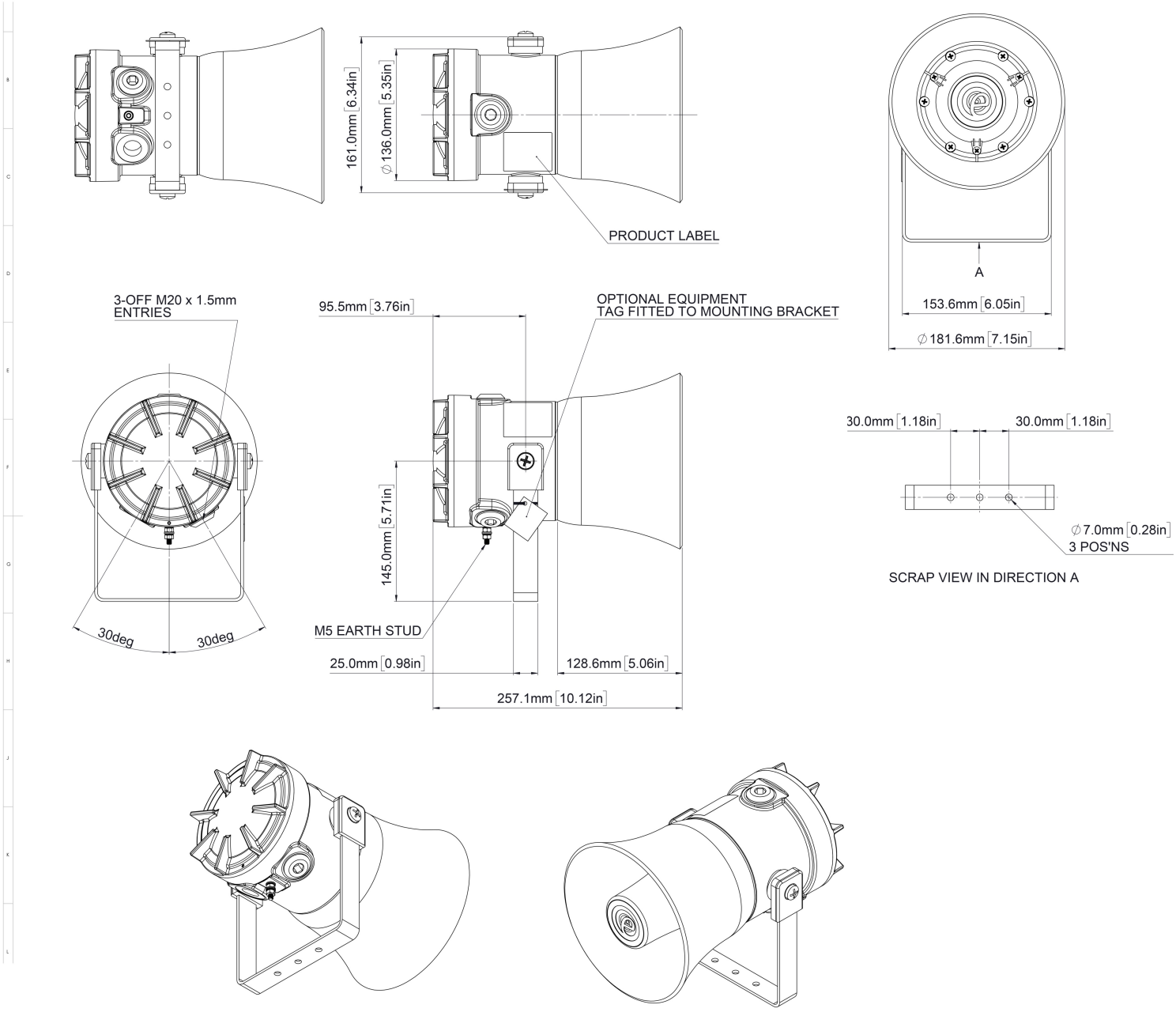
**Alarm stage control:**

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 positive, negative 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 STExS1F is available as a plated assembly configured with Xenon strobe or LED beacons with or without a STExJ2 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 + 1.5s 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 + 1.5s gap - ISO 820... | Any | T 1 | T 8 |
| T 12 | 1000(0.5s on, 0.5s off)x3 + 1.5s gap - ISO 82... | Any | T 1 | T 8 |
| T 13 | 422/775 - (0.85 on, 0.5 off) x3 + 1.5s 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 |
| 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 |



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