2-21-200 / Heavy industrial marine grade signals

# MA2F Alarm Horn Sounder IP66/67 Type 4/4X/13

**The MA2F is a high output, 123dB(A) alarm horn sounder. Featuring a robust, fire retardant, IP66 & IP67 Type 4/4X/13 enclosure.**

The 'M' series of products have been designed to withstand the harshest of environments. Constructed from lightweight, impact and fire resistant ABS, the range features stainless steel, ratchet adjustable mounting brackets. The MA2F features a flare horn and employs the latest in reliable D Class amplifier technology for superior sound output with low in-rush and, current consumption and wide input voltage range. Two user selectable power settings provide the optimum combination of sound level output and current consumption.

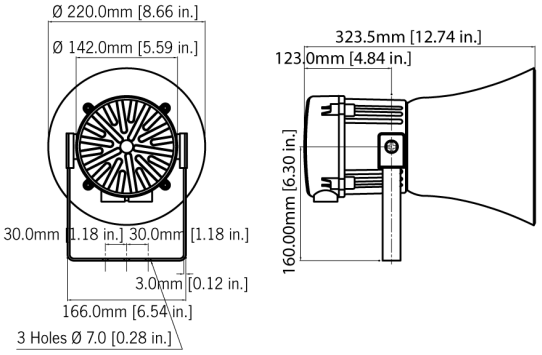
## Features

- Ingress protection IP66/67 Type 4/4X/13
- Automatic synchronisation on multi-sounder systems
- Dual user-selectable sound output power modes
- Continuously rated
- Large termination area
- Dual M20 or 1/2"NPT cable entries – adaptors available
- 316 (A4) Stainless steel mounting bracket
- Ratchet adjustable 'U' bracket for 360° positioning
- Duplicate pluggable cable terminations
- Conformal coated (tropicalised) electronics
- 64 alarm tone frequencies and 4 remotely activated alarm stages
- Positive or negative stage activation switching
- Alternative activation configurations available
- Available with custom tone configurations and frequencies

- The MA2F is a direct replacement for the MA121 alarm horn sounder

## Approvals

- EAC compliant: RU D-GB.GA05.B.12595-20
- Russian Maritime Register of Shipping
  Cert: No. 19.00193.278




## Specification

| | |
|---|---|
| Maximum output: | High power level: 123dB(A) @ 1 m +/- 3dB<br>[114dB(A) @ 10ft/3m +/- 3dB]<br>Default power level: 120dB(A) @ 1 m +/- 3dB<br>[111dB(A) @ 10ft/3m +/- 3dB] |
| Nominal output: | High power level: 120dB(A) @ 1m +/- 3dB<br>[111dB(A) @ 10ft/3m] +/- 3dB<br>Default power level: 117dB(A) @ 1m +/- 3dB<br>[108dB(A) @ 10ft/3m] +/- 3dB |
| No. of tones: | 64 (UKOOA / PFEER compliant) |
| No. of stages: | 4 |
| Volume control: | Full range control |
| Effective range: | High power level: 320m/1050ft @ 1KHz<br>Default power level: 214m/702ft @ 1KHz |
| Voltages DC: | 10-60V dc<br>High voltage DC option available |
| Voltages AC: | 100-240V ac |
| In rush: | 815mA within 4.0ms @ 24Vdc |
| Stage switching: | Negative, positive, voltage free |
| Line monitoring: | Diode polarized for use in supervised circuits |
| Ingress protection: | IP66 & IP67 Type 4/4X/13 |
| Enclosure material: | High impact UL94 V0 & 5VA FR ABS |
| Enclosure colour: | Grey (RAL7038) or Red (RAL3000) |
| Cable entries: | 2 x M20; 1 x M20 & 1 × 1/2"NPT; 2 × 1/2"NPT<br>supplied with blanking plug |
| Terminals: | 0.5 – 2.5mm² (20-14 AWG) |
| Operating temp: | -40 to +66°C [-40° to +151°F] |
| Storage temp: | -40 to +70°C [-40° to +158°F] |
| Relative humidity: | 95% at 20°C [68°F] |
| MTBF | DC: 93.92 years / 822,706 hours – MIL 217<br>AC: 149.81 years / 1,312,335 hours – MIL 217 |
| Weight: | DC: 2.75kg/6.0lbs AC:3.25kg/7.2lbs |

## Part Codes

| Variable: | Identifier: | Description: |
|---|---|---|
| Product type: | MA2 | Alarm horn sounder |
| Flare type: | F | Flare re-entrant horn |
| Voltage: | DC024<br>AC230 | 10-60V dc<br>100-240V ac 50/60Hz |
| Cable entries: [e] | A<br>B<br>C | M20x1.5 & ½" NPT<br>M20x1.5 & M20x1.5 (Default)<br>½" NPT & ½" NPT |
| Stopping plug material: [m] | N | Nylon |
| Bracket: [s] | 1<br>3 | 316 (A4) Stainless Steel<br>316 (A4) Stainless Steel with Equipment tag |
| Approvals: | A1 | CE, EAC, RMRS |
| Enclosure: | R<br>G | Red (RAL 3000)<br>Grey (RAL7038) |
| Accessories: | | |
| SP65-0001-A4 | Pole Mount Bracket Kit 2" St/St 316 (A4) | |
| SP65-0003-A4 | Sunshade – St/St 316 (A4) | |

## Current Consumption

| Product Version: | Nominal Voltage: | Voltage Range: | Default Power Level Current: | High Power Level Current: |
|---|---|---|---|---|
| DC024 | 12V dc<br>24V dc<br>48Vdc | 10-60V dc | 376mA<br>391mA<br>223mA | 440mA<br>888mA<br>453mA |
| AC230 | 115Vac 50/60Hz<br>230V ac 50/60Hz | 100-240V ac | 173mA<br>107mA | 340mA<br>212mA |

## Tone table

| S 1 | Description | S 2 | S 3 | S 4 |
|---|---|---|---|---|
| T 1 | 1000 Continuous - PFEER Toxic Gas | T 3 | T 2 | T 44 |
| T 2 | 1200/500 @ 1Hz Sweeping - DIN / PFEER P.T.A.P. | T 1 | T 3 | T 44 |
| T 3 | 1000 @ 0.5Hz (1s on, 1s off) Intermittent - P... | T 1 | T 2 | T 44 |
| T 4 | 1.4KH-1.6KHz 1s, 1.6KHz-1.4KHz 0.5s - NF C 48... | T 44 | T 24 | T 1 |
| T 5 | 544(100mS)/440 (400mS) - NF S 32-001 | T 52 | T 19 | T 1 |
| T 6 | 1500/500 - (0.5s on , 0.5s off) x3 + 1s gap -... | T 7 | T 44 | T 1 |
| T 7 | 500-1500Hz Sweeping 2 sec on 1 sec off - AS4428 | T 6 | T 44 | T 1 |
| T 8 | 500/1200Hz @ 0.26Hz(3.3s on, 0.5s off) - NEN ... | T 44 | T 24 | T 35 |
| T 9 | 1000 (1s on, 1s off)x7 + (7s on, 1s off) - IM... | T 18 | T 34 | T 1 |
| T 10 | 1000 (1s on, 1s off)x7 + (7s on, 1s off) - IM... | T 21 | T 34 | T 1 |
| T 11 | 420(0.5s on, 0.5s off)x3 + 1s gap - ISO 8201 ... | T 44 | T 1 | T 8 |
| T 12 | 1000(0.5s on, 0.5s off)x3 + 1s gap - ISO 8201... | T 44 | T 1 | T 8 |
| T 13 | 422/775 - (0.85 on, 0.5 off) x3 + 1s gap - ... | T 44 | T 1 | T 8 |
| T 14 | 1000/2000 @ 1Hz - Singapore | T 23 | T 3 | T 35 |
| T 15 | 300 Continuous | T 44 | T 24 | T 35 |
| T 16 | 440 Continuous | T 44 | T 24 | T 35 |
| T 17 | 470 Continuous | T 44 | T 24 | T 35 |
| T 18 | 500 Continuous - IMO code 2 (Low) | T 44 | T 24 | T 35 |
| T 19 | 554 Continuous | T 64 | T 24 | T 35 |
| T 20 | 660 Continuous | T 44 | T 24 | T 35 |
| T 21 | 800 Continuous - IMO code 2 (High) | T 44 | T 24 | T 35 |
| T 22 | 1200 Continuous | T 44 | T 24 | T 35 |
| T 23 | 2000 Continuous | T 15 | T 3 | T 35 |
| T 24 | 2400 Continuous | T 48 | T 20 | T 35 |
| T 25 | 440 @ 0.83Hz (0.60s on, 0.60s off) Intermittent | T 1 | T 44 | T 8 |
| T 26 | 470 @ 0.9Hz (0.55s on, 0.55s off) Intermittent | T 1 | T 44 | T 8 |
| T 27 | 470 @ 5Hz (0.10s on, 0.10s off) Intermittent | T 1 | T 44 | T 8 |
| T 28 | 544 @ 1.14Hz (0.43s on, 0.44s off) Intermittent | T 44 | T 24 | T 8 |
| T 29 | 655 @ 0.875Hz (0.57s on, 0.57s off) Intermittent | T 1 | T 44 | T 8 |
| T 30 | 660 @ 0.28Hz (1.80s on, 1.80s off) Intermittent | T 44 | T 24 | T 8 |
| T 31 | 660 @ 3.3Hz (0.15s on, 0.15s off) Intermittent | T 30 | T 24 | T 8 |
| T 32 | 745 @ 1Hz (0.50s on, 0.50s off) Intermittent | T 44 | T 24 | T 8 |
| T 33 | 800 (0.25s on, 1.00s off) Intermittent | T 53 | T 24 | T 8 |
| T 34 | 800 @ 2Hz (0.25s on, 0.25s off) - IMO code 3.... | T 56 | T 24 | T 8 |
| T 35 | 1000 @ 1Hz (0.50s on, 0.50s off) Intermittent | T 44 | T 24 | T 8 |
| T 36 | 2400 @ 1Hz (0.50s on, 0.50s off) Intermittent | T 21 | T 24 | T 8 |
| T 37 | 2900 @ 5Hz (0.10s on, 0.10s off) Intermittent | T 53 | T 24 | T 8 |
| T 38 | 363/518 @ 1Hz (0.50s / 0.50s) Alternating | T 1 | T 8 | T 19 |
| T 39 | 450/500 @ 2Hz (0.25s / 0.25s) Alternating | T 1 | T 8 | T 19 |
| T 40 | 554/440 @ 1Hz (0.50s / 0.50s) Alternating | T 44 | T 24 | T 19 |
| T 41 | 554/440 @ 0.65Hz (0.76s / 0.76s) Alternating | T 1 | T 8 | T 19 |
| T 42 | 561/760 @ 0.83Hz (0.60s / 0.60s) Alternating | T 1 | T 8 | T 19 |
| T 43 | 780/600 @ 0.96Hz (0.52s / 0.52s) Alternating | T 1 | T 8 | T 19 |
| T 44 | 800/1000 @ 2Hz (0.25s / 0.25s) Alternating | T 5 | T 24 | T 19 |
| T 45 | 970/800 @ 2Hz (0.25s / 0.25s) Alternating | T 1 | T 8 | T 19 |
| T 46 | 800/1000 @ 0.875Hz (0.57s / 0.57s) Alternating | T 53 | T 24 | T 19 |
| T 47 | 2400/2900 @ 2Hz (0.25s / 0.25s) Alternating | T 57 | T 24 | T 19 |
| T 48 | 500/1200 @ 0.3Hz (1.67s / 1.67s) Sweeping | T 44 | T 24 | T 12 |
| T 49 | 560/1055 @ 0.18Hz (2.73s / 2.73s) Sweeping | T 44 | T 24 | T 12 |
| T 50 | 560/1055 @ 3.3Hz (0.15s / 0.15s) Sweeping | T 44 | T 24 | T 12 |
| T 51 | 600/1250 @ 0.125Hz (4s / 4s) Sweeping | T 44 | T 24 | T 12 |
| T 52 | 660/1200 @ 1Hz (0.50s / 0.50s) Sweeping | T 64 | T 24 | T 12 |
| T 53 | 800/1000 @ 1Hz (0.50s / 0.50s) Sweeping | T 56 | T 24 | T 12 |
| T 54 | 800/1000 @ 7Hz (0.07s / 0.07s) Sweeping | T 57 | T 24 | T 12 |
| T 55 | 800/1000 @ 50Hz (0.01s / 0.01s) Sweeping | T 54 | T 24 | T 12 |
| T 56 | 2400/2900 @ 7Hz (0.07s / 0.07s) Sweeping | T 57 | T 24 | T 12 |
| T 57 | 2400/2900 @ 1Hz (0.50s / 0.50s) Sweeping | T 47 | T 24 | T 12 |
| T 58 | 2400/2900 @ 50Hz (0.01s / 0.01s) Sweeping | T 54 | T 24 | T 12 |
| T 59 | 2500/3000 @ 2Hz (0.25s / 0.25s) Sweeping | T 44 | T 24 | T 12 |
| T 60 | 2500/3000 @ 7.7Hz (0.65s / 0.65s) Sweeping | T 44 | T 24 | T 12 |
| T 61 | 800Hz Motor Siren | T 44 | T 24 | T 12 |
| T 62 | 1200Hz Motor Siren | T 44 | T 24 | T 12 |
| T 63 | 2400Hz Motor Siren | T 44 | T 24 | T 12 |
| T 64 | Simulated Bell | T 44 | T 21 | T 12 |