

# AS/SB/24/110 and AS/SB/24/120 (Asserta 24V Sounder/Beacon)

## Technical Data

| EATON | AS/SB/24/110          | AS/SB/24/120          |
|-------|-----------------------|-----------------------|
| CE    | 06<br>2831<br>DoP0045 | 06<br>2831<br>DoP0047 |

| Specification           | 24Vdc Sounder             | 24Vdc Beacon              |
|-------------------------|---------------------------|---------------------------|
| Operation               | Continuous                | Continuous                |
| Operating Voltage Range | 18 - 30Vdc                | 18 - 30Vdc                |
| Rating                  | N/A                       | 3.5 Joules                |
| Sound output @1m        | See table overleaf        | N/A                       |
| Current Consumption     | See table overleaf        | See table below           |
| Tones                   | 42 - See table overleaf   | N/A                       |
| Operating Temperature   | -25°C to +70°C            | -25°C to +70°C            |
| Live Monitoring Method  | Polarised Input           | Polarised Input           |
| Construction            | ABS FR Plastic            | PC FR plastic             |
| Monitoring mode         | Polarising diode          | Polarising diode          |
| Cable Size              | 0.28 - 2.5mm <sup>2</sup> | 0.28 - 2.5mm <sup>2</sup> |
| Ingress Protection      | IP33C (IP66*)             | IP33C (IP66*)             |

\*Device not EN54 certified to IP66. Manufacturer's declaration.

Fire Alarm Device - Sounder for indoor (type A) and outdoor (type B) use

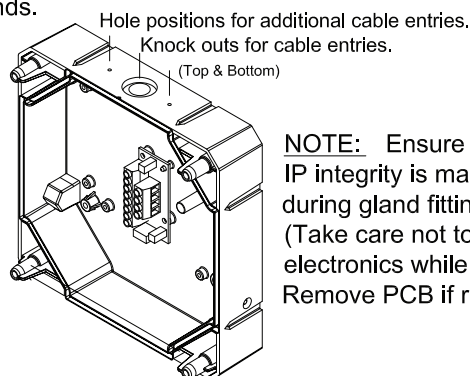
### Essential Characteristics

Harmonized Technical Specification: EN54-3:2001+A1:2002+A2:2006

| Clause(s)               | Performance |
|-------------------------|-------------|
| 4.2, 4.3, 5.2, 5.3      | Pass        |
| 4.4, 4.5, 4.6, 5.4      | Pass        |
| 5.5, 5.6, 5.7, 5.8, 5.9 | Pass        |
| 5.8, 5.9, 5.10          | Pass        |
| 5.11                    | Pass        |
| 5.12, 5.13, 5.14, 5.15  | Pass        |
| 5.16                    | Pass        |
| 5.17                    | Pass        |

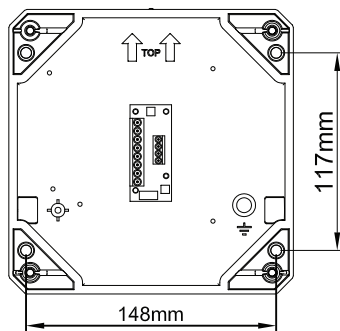
## 1. Installation

Knockout or drill required cable gland holes, and fix required cable glands.

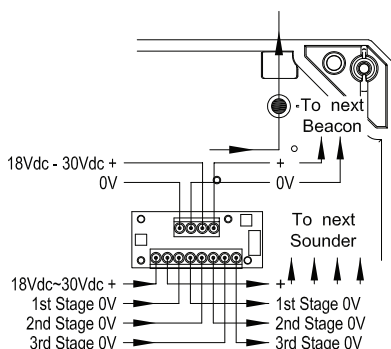


## 2. Fixing Details

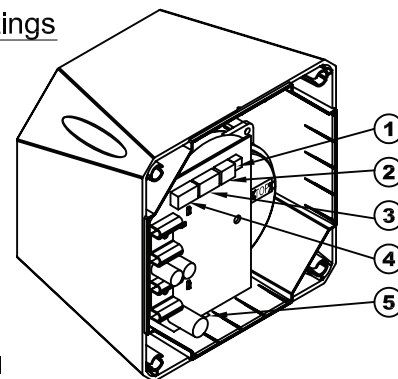
Fix base to wall in 4 positions.



## 3. Connection



## 4. Sounder Settings



### 1. Volume Control



Turn dial clockwise to increase volume. (Nominal 20dB range)

### 2. Switch 1 (Time out setting)

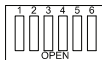


0 = Open  
1 = Closed

| BIT 123X | Minutes | BIT 123X | Minutes |
|----------|---------|----------|---------|
| 111X     | 5       | 011X     | 25      |
| 110X     | 10      | 010X     | 30      |
| 101X     | 15      | 001X     | 40      |
| 100X     | 20      | 000X     | ∞       |

Switch 1 bit 4 is to select voice (0)/ no voice (1). (Where fitted)

### 3. Switch 2 (Stage1 tone selection)



See table overleaf.

### 4. Switch 3 (Stage 2 tone selection)



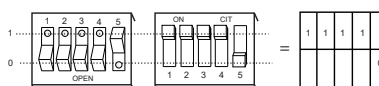
See table overleaf. (Stage 3 Tone is dependent on the setting of switch 2)

### 5. Beacon Switch (24Vdc only)



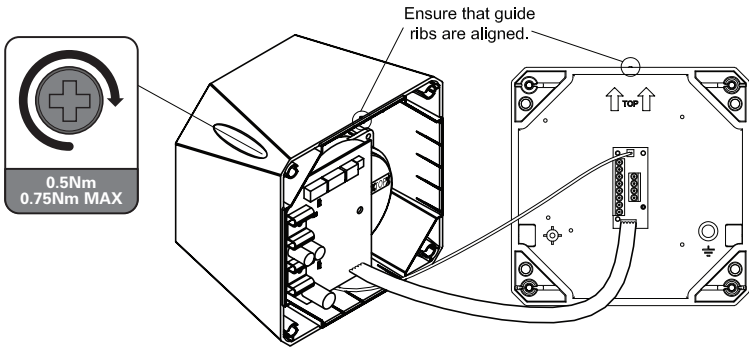
See table below.

| Switch 1 | Switch 2 | Flash Rate | Current   |
|----------|----------|------------|-----------|
| open     | open     | 45/min     | 120-370mA |
| closed   | open     | 60/min     | 190-570mA |
| open     | closed   | 85/min     | 180-530mA |
| closed   | closed   | 120/min    | 220-620mA |



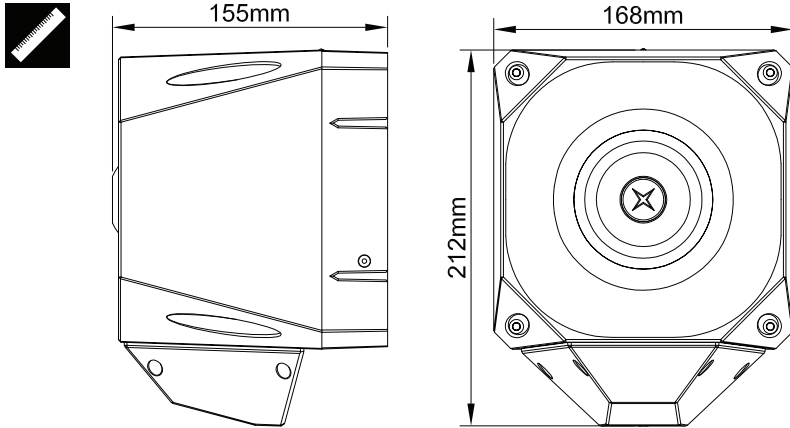
Powering Business Worldwide

### 5. Sounder Assembly



1. Plug the 5 way ribbon cable into the base header.
2. Plug the 2 way ribbon cable into the base header.
3. Ensure that the top indicator on the base is aligned with the top indicator on the sounder, and push the sounder onto the base.
4. Secure the sounder to the base using the bolts provided.

**Torque to 0.5Nm, do not exceed 0.75Nm.**  
 WARNING : On some tones the output level can exceed 120dB(A) @ 1m. Consult the relevant or appropriate health and safety regulations for guidelines. Tones Table overleaf.  
 NOTE : Polar dispersion information available in the technical manual. (Ref:M03-003)



Asserta Midi Sounder Tones Table

| 1st & 2nd Tone bank | 3rd Tone bank | Switch Setting (0-Open) | Tone Description |                |                                                       |                                   |           | Asserta 110                       |                   |                        | Asserta 120                       |                    |                        |
|---------------------|---------------|-------------------------|------------------|----------------|-------------------------------------------------------|-----------------------------------|-----------|-----------------------------------|-------------------|------------------------|-----------------------------------|--------------------|------------------------|
|                     |               |                         |                  |                |                                                       |                                   |           | Average current @ max vol @ 24Vdc | 24Vdc on axis @1M | EN54-3 30Vdc see notes | Average current @ max vol @ 24Vdc | *24Vdc on axis @1M | EN54-3 30Vdc see notes |
|                     |               | 123456                  | Pattern          | Frequency (Hz) | Rate                                                  | Market                            | Depiction | mA                                | dB(A)             | dB(A)                  | mA                                | dB(A)              | dB(A)                  |
| A.1                 | A14           | 111111                  | Alternating      | 970 then 800   | 2Hz (250ms-250ms)                                     | EVIAN                             |           | 108                               | 111               | *                      | 450                               | 117                | *                      |
| A.2                 | A14           | 111110                  | Sweep            | 800 to 970     | 7Hz (7/s)                                             |                                   |           | 103                               | 112               | *                      | 450                               | 120                | *                      |
| A.3                 | A14           | 111101                  | Sweep            | 800 to 970     | 1Hz (1/s)                                             |                                   |           | 105                               | 112               | 112                    | 450                               | 120                | 116                    |
| A.4                 | A9            | 111100                  | Continuous       | 2850           | Steady                                                |                                   |           | 122                               | 106               | *                      | 445                               | 109                | *                      |
| A.5                 | A4            | 111011                  | Sweep            | 2400 to 2850   | 7Hz                                                   |                                   |           | 119                               | 103               | *                      | 447                               | 109                | *                      |
| A.6                 | A4            | 111010                  | Sweep            | 2400 to 2850   | 1Hz                                                   |                                   |           | 121                               | 105               | *                      | 446                               | 110                | *                      |
| A.7                 | A14           | 111001                  | Slow whoop       | 500 to 1200    | 3s sweep, 0.5 s silence, then repeat (rep)            | Slow Whoop Netherlands            |           | 115                               | 111               | 112                    | 340                               | 119                | 116                    |
| A.8                 | A14           | 111000                  | Sweep (DIN)      | 1200 to 500    | 1Hz                                                   | Din / PFEER (PAPA)                |           | 115                               | 111               | 112                    | 430                               | 119                | 116                    |
| A.9                 | A4            | 110111                  | Alternating      | 2850 then 2400 | 2Hz (250ms-250ms)                                     |                                   |           | 121                               | 108               | *                      | 450                               | 112                | *                      |
| A.10                | A14           | 110110                  | Intermittent     | 970            | 0.5Hz (1s On/1s Off)                                  | PFEER alert                       |           | 71                                | 108               | *                      | 229                               | 117                | *                      |
| A.11                | A14           | 110101                  | Alternating      | 970 then 800   | 1Hz (500ms-500ms)                                     |                                   |           | 106                               | 109               | *                      | 375                               | 116                | *                      |
| A.12                | A4            | 110100                  | Intermittent     | 2850           | 0.5Hz (1s On/1s Off)                                  |                                   |           | 89                                | 107               | *                      | 235                               | 109                | *                      |
| A.13                | A14           | 110011                  | Intermittent     | 970            | 0.8Hz (250ms On/1s Off)                               | ASP                               |           | 35                                | 108               | *                      | 100                               | 117                | *                      |
| A.14                | A8            | 110010                  | Continuous       | 970            | Steady                                                | PFEER - toxic gas                 |           | 104                               | 109               | 111                    | 450                               | 117                | 115                    |
| A.15                | A14           | 110001                  | Alternating      | 440 then 554   | 100ms-400ms                                           | France NFS 32 S 32-001            |           | 76                                | 106               | *                      | 294                               | 115                | *                      |
| A.16                | A14           | 110000                  | Intermittent     | 660            | 3.3Hz (150ms On/150ms Off)                            | Swedish (Air raid)                |           | 60                                | 106               | *                      | 232                               | 114                | *                      |
| A.17                | A14           | 101111                  | Intermittent     | 660            | 0.28Hz (1.8s On/1.8s Off)                             | Swedish (Local warning)           |           | 88                                | 106               | *                      | 220                               | 115                | *                      |
| A.18                | A14           | 101110                  | Intermittent     | 660            | 0.05Hz (6.5s On/13s Off)                              | Swedish (Pre-mess)                |           | 101                               | 106               | *                      | 150                               | 115                | *                      |
| A.19                | A1            | 101101                  | Continuous       | 660            | Steady                                                | Swedish (All clear)               |           | 103                               | 107               | *                      | 429                               | 116                | *                      |
| A.20                | A19           | 101100                  | Alternating      | 440 then 554   | 0.5Hz (1s On/1s Off)                                  | Swedish (Turn out)                |           | 83                                | 106               | *                      | 312                               | 115                | *                      |
| A.21                | A4            | 101011                  | Intermittent     | 660            | 1Hz (500ms-500ms)                                     | Swedish                           |           | 66                                | 106               | *                      | 220                               | 115                | *                      |
| A.22                | A4            | 101010                  | Intermittent     | 2850           | 4Hz (150ms On/100ms Off)                              |                                   |           | 83                                | 105               | *                      | 286                               | 108                | *                      |
| A.23                | A14           | 101001                  | Sweep            | 800 to 970     | 50Hz                                                  |                                   |           | 102                               | 109               | *                      | 419                               | 117                | *                      |
| A.24                | A4            | 101000                  | Sweep            | 2400 to 2850   | 50Hz                                                  |                                   |           | 120                               | 106               | *                      | 440                               | 110                | *                      |
| A.25                | A14           | 100111                  | Intermittent     | 970            | 3 x 500ms pulses followed by 1.5s silence then repeat | ISO 8201/US Temporal              |           | 62                                | 109               | *                      | 180                               | 117                | *                      |
| A.26                | A4            | 100110                  | Intermittent     | 2850           | 3 x 500ms pulses followed by 1.5s silence then repeat | ISO 8201/US Temporal              |           | 64                                | 107               | *                      | 180                               | 109                | *                      |
| A.27                | A6            | 100101                  | Continuous       | 4000           | Steady                                                |                                   |           | 109                               | 101               | *                      | 450                               | 105                | *                      |
| A.28                | A14           | 100100                  | Alternating      | 970 then 800   | 2Hz (250ms-250ms)                                     |                                   |           | 106                               | 109               | *                      | 414                               | 116                | *                      |
| A.29                | A14           | 100011                  | Alternating      | 990 then 650   | 2Hz (250ms-250ms) (Symphoni tones)                    |                                   |           | 104                               | 109               | 111                    | 444                               | 117                | 115                    |
| A.30                | A14           | 100010                  | Alternating      | 510 then 610   | 2Hz (250ms-250ms) (Squashni Micro tones)              |                                   |           | 96                                | 107               | 109                    | 370                               | 116                | 113                    |
| A.31                | A14           | 100001                  | Sweep            | 300 to 1200    | 1Hz                                                   |                                   |           | 84                                | 110               | *                      | 285                               | 118                | *                      |
| A.32                | A3            | 100000                  | Continuous       | Bell           | Steady                                                | See attached for waveform details |           | 120                               | 111               | *                      | 450                               | 117                | *                      |
| A.33                | A14           | 011111                  | Intermittent     | Bell           | 3 x 500ms pulses followed by 1.5s silence then repeat | Bell / US temporal                |           | 69                                | 111               | *                      | 180                               | 117                | *                      |
| A.34                | A4            | 011110                  | Alternating      | 1000 then 2000 | 1Hz (500ms-500ms)                                     | Singapore                         |           | 112                               | 107               | *                      | 450                               | 115                | *                      |
| A.35                | A14           | 011101                  | Intermittent     | 420            | 6 step ramped start pulsed @ 0.625S ON/0.625S OFF     | Australian alert                  |           | 46                                | 108               | *                      | 140                               | 116                | *                      |
| A.36                | A14           | 011100                  | Sweep            | 500 to 1200    | Sweep 3.75s followed by 0.25s gap                     | Australian evac                   |           | 81                                | 109               | *                      | 340                               | 117                | *                      |
| A.37                | A14           | 011011                  | Sweep            | 1400 to 1600   | Sweep up 1s, sweep down 0.5s                          | NF C 48-285                       |           | 122                               | 108               | *                      | 448                               | 116                | *                      |
| A.38                | A14           | 011010                  | Sweep            | 500 to 1200    | Sweep UP & DOWN over 3s                               | Siren                             |           | 94                                | 109               | *                      | 310                               | 117                | *                      |
| A.39                | A14           | 011001                  | Intermittent     | 720            | 0.7s ON, 0.30FF                                       | German ind alarm                  |           | 90                                | 110               | *                      | 310                               | 117                | *                      |
| A.40                | A14           | 011000                  | Sweep            | 422 to 775     | Sweep for 0.85s, 1s delay, repeat                     | NFPA Whoop                        |           | 60                                | 109               | *                      | 180                               | 118                | *                      |
| A.41                | A3            | 010111                  | Continuous       | 470            | Steady                                                | Horn (USA)                        |           | 85                                | 104               | *                      | 340                               | 114                | *                      |
| A.42                | A3            | 010110                  | Continuous       | 370            | Steady                                                | Air horn (USA)                    |           | 76                                | 104               | *                      | 272                               | 113                | *                      |

Note (a): Tones approved under the Construction Products Regulation for Fire Alarm Applications, are shown in the column marked EN54-3.  
 Note (b): EN54-3 measurements shown reflect minimum expected SPL readings at Maximum Volume at the Loudest Point around the EN54-3 defined sounder axis.  
 Note (c): All other tone measurements reflect manufacturers data based on 'on axis' measurements, and are not verified by a Notified body.  
 Note (d): Detailed EN54-3 polar SPL measurements are available in the Product Manual for the appropriate sounder.  
 Note (e): All measurements taken at 20°C operating temperature.

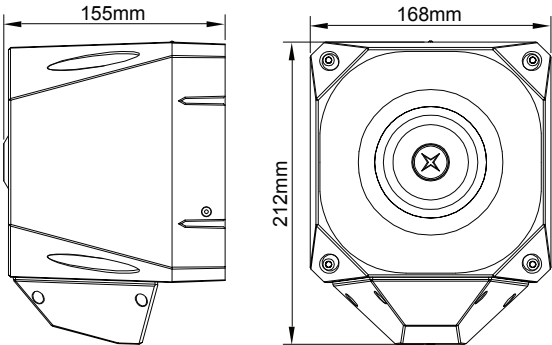
Specification

| Sounder                 | 230Vac 110dB(A)               | 230Vac 120dB(A)               |
|-------------------------|-------------------------------|-------------------------------|
| Operation               | Continuous                    | Continuous                    |
| Operating Voltage Range | 230Vac 50/60Hz                | 230Vac 50/60Hz                |
| Sound Output @ 1m       | See table overleaf            | See table overleaf            |
| Current Consumption     | 39mA@230Vac                   | 65mA@230Vac                   |
| Tones                   | 42 see table overleaf         | 42 see table overleaf         |
| Operating Temperature   | -25°C to +75°C                | -25°C to +75°C                |
| Construction            | ABS /PC FR plastic            | ABS /PC FR plastic            |
| Termination             | 0.28~2.5mm <sup>2</sup> cable | 0.28~2.5mm <sup>2</sup> cable |
| Ingress Protection      | IP66                          | IP66                          |
| Fuse                    | 80mA Antisurge, 20mm          | 80mA Antisurge, 20mm          |

| Beacon                  | 230Vac                        |
|-------------------------|-------------------------------|
| Operating Voltage Range | 230Vac 50/60Hz                |
| Current Consumption     | 15mA                          |
| Rating                  | 2 Joules                      |
| Operating Temperature   | -25°C to +75°C                |
| Construction            | ABS /PC FR plastic            |
| Termination             | 0.28~2.5mm <sup>2</sup> cable |
| Ingress Protection      | IP66                          |
| Fuse                    | 80mA Antisurge, 20mm          |

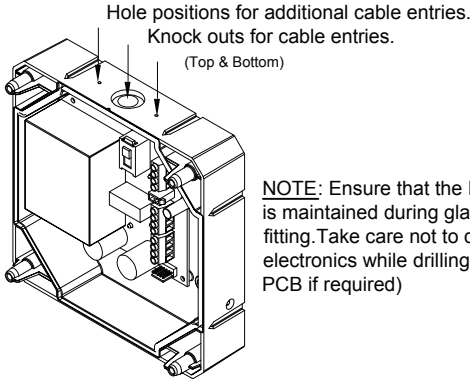
NOTE: This product is not suitable for 115Vac Supplies.

Dimensions



1. Installation

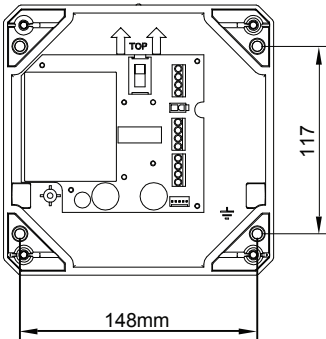
Knockout or drill required cable gland holes, and fix required cable glands.



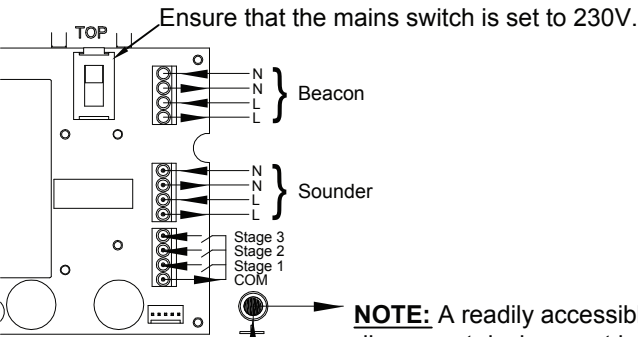
NOTE: Ensure that the IP integrity is maintained during gland fitting. Take care not to disturb the electronics while drilling. Remove PCB if required)

2. Fixing Details

Fix base to wall in 4 positions.

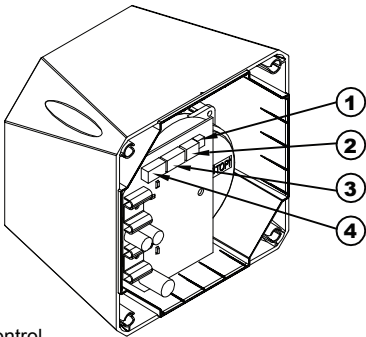


3. Connection



NOTE: A readily accessible disconnect device must be incorporated in the mains supply wiring to this unit.

4. Sounder Settings



1. Volume Control

Turn dial clockwise to increase volume. (Nominal 20dB range)

2. Switch 1 (Time out setting)



0 = Open  
1 = Closed

| BIT 123X | Minutes | BIT 123X | Minutes |
|----------|---------|----------|---------|
| 111X     | 5       | 011X     | 25      |
| 110X     | 10      | 010X     | 30      |
| 101X     | 15      | 001X     | 40      |
| 100X     | 20      | 000X     | ∞       |

Switch 1 bit 4 is to select voice (0)/ no voice (1). (Where fitted)

3. Switch 2 (Stage1 tone selection)



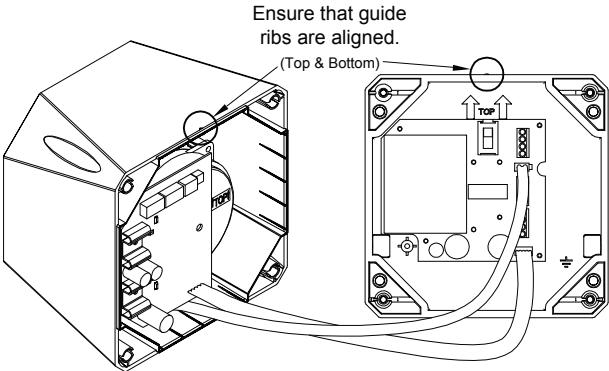
See table overleaf.

4. Switch 3 (Stage 2 tone selection)



See table overleaf.  
(Stage 3 Tone is dependent on the setting of switch 2)

5. Sounder Assembly



1. Plug the 5 way ribbon cable into the base header.
2. Plug the 2 way ribbon cable into the base header.
3. Ensure that the top indicator on the base is aligned with the top indicator on the sounder, and push the sounder onto the base.
4. Secure the sounder to the base using the bolts provided.



**WARNING** : On some tones the output level can exceed 120dB(A) @ 1m.  
: Consult the relevant or appropriate health and safety regulations for guidelines.  
: Tones Table overleaf.  
: Do not remove cover, refer servicing to qualified personnel.  
: High voltage present within this equipment.



**NOTE** : Polar dispersion information available in the technical manual. (Ref:M03-003)

# Industrial Sounder Tones Table

| No  | CODE<br>123456 | TONE         |              |                                                     |                                   | Stage 1 & 2      |                  | STAGE 3 |
|-----|----------------|--------------|--------------|-----------------------------------------------------|-----------------------------------|------------------|------------------|---------|
|     |                |              |              |                                                     |                                   | 115Vac/230Vac LP | 115Vac/230Vac HP |         |
|     |                | Description  | Frequencies  | Pattern                                             | Use                               | dB(A)@1m         | dB(A)@1m         |         |
| A1  | 111111         | Alternating  | 800 & 970    | 2Hz (250ms-250ms)                                   |                                   | 111              | 120              | A14     |
| A2  | 111110         | Sweep        | 800 & 970    | 7Hz (7/s)                                           |                                   | 112              | 120              | A14     |
| A3  | 111101         | Sweep        | 800 & 970    | 1Hz (1/s)                                           |                                   | 112              | 120              | A14     |
| A4  | 111100         | Continuous   | 2850         | Steady                                              |                                   | 106              | 111              | A9      |
| A5  | 111011         | Sweep        | 2400 to 2850 | 7Hz                                                 |                                   | 103              | 109              | A4      |
| A6  | 111010         | Sweep        | 2400 to 2850 | 1Hz                                                 |                                   | 105              | 110              | A4      |
| A7  | 111001         | Slow Whoop   | 500 to 1200  | 3s sweep, 0.5s silence, then repeat (rep)           | Slow Whoop Netherlands            | 111              | 119              | A14     |
| A8  | 111000         | Sweep        | 1200 to 500  | 1Hz                                                 | DIN/PFEER (PAPA)                  | 111              | 119              | A14     |
| A9  | 110111         | Alternating  | 2400 & 2850  | 2Hz (250ms-250ms)                                   |                                   | 108              | 113              | A4      |
| A10 | 110110         | Intermittent | 970          | 0.5Hz (1s On/1s Off)                                | PFEER alert                       | 108              | 117              | A14     |
| A11 | 110101         | Alternating  | 800 & 970    | 1Hz (500ms-500ms)                                   |                                   | 109              | 118              | A14     |
| A12 | 110100         | Intermittent | 2850         | 0.5Hz (1s On/1s Off)                                |                                   | 107              | 112              | A4      |
| A13 | 110011         | Intermittent | 970          | 0.8Hz (250ms On/1s Off)                             |                                   | 108              | 117              | A14     |
| A14 | 110010         | Continuous   | 970          | Steady                                              | PFEER - Toxic gas                 | 109              | 118              | A8      |
| A15 | 110001         | Alternating  | 554 & 440    | 100ms-400ms                                         | France NFS 32 S 32-001            | 106              | 115              | A14     |
| A16 | 110000         | Intermittent | 660          | 3.3Hz (150ms On/150ms Off)                          | Swedish (Air raid)                | 106              | 114              | A14     |
| A17 | 101111         | Intermittent | 660          | 0.28Hz (1.8s On/1.8s Off)                           | Swedish (Local warning)           | 106              | 115              | A14     |
| A18 | 101110         | Intermittent | 660          | 0.05Hz (6.5s On/13s Off)                            | Swedish (Pre-mess)                | 106              | 115              | A14     |
| A19 | 101101         | Continuous   | 660          | Steady                                              | Swedish (All clear)               | 107              | 116              | A1      |
| A20 | 101100         | Alternating  | 554 & 440    | 0.5Hz (1s On/1s Off)                                | Swedish (Turn out)                | 106              | 115              | A19     |
| A21 | 101011         | Intermittent | 660          | 1HZ (500ms-500ms)                                   | Swedish                           | 106              | 115              | A4      |
| A22 | 101010         | Intermittent | 2850         | 4Hz (150ms On/100ms Off)                            |                                   | 105              | 110              | A4      |
| A23 | 101001         | Sweep        | 800 to 970   | 50Hz                                                |                                   | 109              | 117              | A14     |
| A24 | 101000         | Sweep        | 2400 to 2850 | 50Hz                                                |                                   | 106              | 110              | A4      |
| A25 | 100111         | Intermittent | 970          | 3X500ms pulses followed by 1.5s silence then repeat | ISO 8201/US Temporal              | 109              | 118              | A14     |
| A26 | 100110         | Intermittent | 2850         | 3X500ms pulses followed by 1.5s silence then repeat | ISO 8201/US Temporal              | 107              | 112              | A4      |
| A27 | 100101         | Continuous   | 4000         | Steady                                              |                                   | 101              | 105              | A6      |
| A28 | 100100         | Alternating  | 800 & 970    | 2Hz (250ms-250ms)                                   |                                   | 109              | 118              | A14     |
| A29 | 100011         | Alternating  | 990 & 650    | 2Hz (250ms-250ms)(Symphoni tones)                   |                                   | 109              | 117              | A14     |
| A30 | 100010         | Alternating  | 510 & 610    | 2Hz (250ms-250ms)(Squashni Micro tones)             |                                   | 107              | 116              | A14     |
| A31 | 100001         | Sweep        | 300 to 1200  | 1Hz                                                 |                                   | 110              | 118              | A14     |
| A32 | 100000         | Continuous   | Bell         | Steady                                              | See attached for waveform details | 111              | 117              | A3      |
| A33 | 011111         | Continuous   | Bell         | 3X500ms pulses followed by 1.5s silence then repeat | Bell/US Temporal                  | 111              | 117              | A14     |
| A34 | 011110         | Alternating  | 1000 & 2000  | 1Hz (500ms-500ms)                                   | Singapore                         | 107              | 115              | A4      |
| A35 | 011101         | Intermittent | 420          | pulsed @ 0.625s                                     | Australian alert                  | 108              | 118              | A14     |
| A36 | 011100         | Sweep        | 500 to 1200  | Sweep 3.75s followed by 0.25s gap                   | Australian evac                   | 109              | 117              | A14     |
| A37 | 011011         | Sweep        | 1400 to 1600 | Sweep up 1s, sweep down 0.5s                        | NF C 48-265                       | 108              | 116              | A14     |
| A38 | 011010         | Sweep        | 500 to 1200  | Sweep up & down over 3s                             | Siren                             | 109              | 117              | A14     |
| A39 | 011001         | Intermittent | 720          | 0.7s On, 0.3 Off                                    | German ind alarm                  | 110              | 118              | A14     |
| A40 | 011000         | Sweep        | 422 to 775   | Sweep for 0.85s, 1s delay, repeat                   | NFPA Whoop                        | 109              | 118              | A14     |
| A41 | 010111         | Continuous   | 470          | Steady                                              | Horn (USA)                        | 104              | 114              | A3      |
| A42 | 010110         | Continuous   | 370          | Steady                                              | Air Horn (USA)                    | 104              | 113              | A3      |