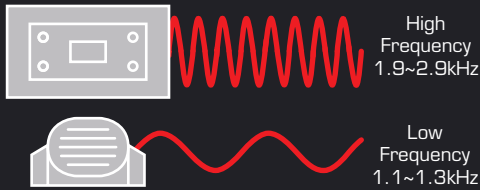


Tonal Alarms

The traditional reversing alarm 'bleep, bleep, bleep' sound is also known as a 'Tonal' alarm.

Tonal alarms operate at one fixed frequency (kHz).

The frequency output is different for each model and can be important in the effectiveness of the alarm in differing workplace environments.



Self Cleaning Ports

Reversing alarms can be used in hostile environments and suffer from debris, water and dust ingress.

Brigade Heavy Duty reversing alarm models use a double reflex horn and patented self-cleansing Pressure Port System™.

This feature uses pressure created by the dome speaker to pump mud, dust and water out of the sound chamber. The result is an increased reliability when used in hostile environments.



Sounder Units

Not all reversing alarms are built the same. Each model in the Brigade range uses a different type of sounder unit appropriate for its application.

Dome Speaker

Ideal option for high sound pressure level (SPL) models. The Dome Speaker utilises a large magnet, voice coil with a conventional Cone Speaker mated to an acoustically designed true-horn. This generates high SPL with superb sound quality from a relatively small unit. Brigades Dome Speakers are tough, durable, and guaranteed waterproof (IP68), so can be steam-cleaned and pressure washed. Working life and sound quality are unimpaired by extremes of temperature and other adverse conditions.

Conventional Cone Speaker

A good option for medium and low SPL models, subject to design and materials used. *Not suitable for high SPL models over 102 dB(A) due to cone speaker over stress.* Brigade's cone speakers are tough, durable and fully waterproof (IP68), so can be steam-cleaned, pressure washed and offer long life in extreme conditions. Great sound quality, even under extremes of temperature and other adverse conditions.

Piezo

Most budget and light duty alarms use piezo sounders. Good for light duty applications, but not as tough or reliable as a quality tone speaker. SPL may reduce in low temperatures. High frequency, piercing sound, which may be irritating and painful at higher SPLs. Water resistant.



Tonal Reversing Alarms

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Tonal Reversing Alarms

Tonal Self-Adjusting



SA800



- Continuously self-adjusts to 5 – 10dB above ambient sound pressure levels.
- Frequency optimised for construction equipment in heavy duty models.
- Patented 'Dome Speaker' technology.
- Self cleaning port in heavy duty models.
- Deutsch connector on IDC model.
- Environmentally sealed – IP68.
- Epoxy filled for maximum vibration resistance.
- Can be steam & pressure cleaned.
- Multi-voltage.
- Lifetime warranty (Excluding 777 – 2 years).

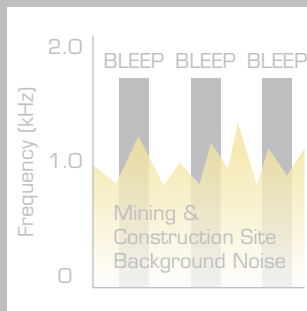
Voltage : 12–24V
Body : SA400 AES
 SA800, SA917 & 777 Glass Reinforced Nylon 10G
Vibration :
EMC : CE, C-Tick & 'e' marked
Standards : Conforms to SAE J994 environmental
Operating Temperature : -40°C to 85°C
Ingress Protection : IP68

Frequency for HD Models

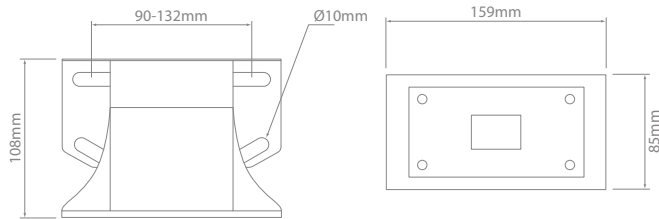
A 'Heavy Duty' tonal reversing alarm doesn't just mean it is built to withstand the rigors of a harsh environment, it must also perform at it's best for the task at hand.

Carefully optimised frequency characteristics make the Heavy Duty range clearly audible under the typical working conditions found in mining, construction and urban/highway environments.

Heavy Duty models use a frequency of 1.9kHz, optimised for construction equipment, as lower frequencies are likely to be masked by construction site noise, which is typically around 1.0kHz.

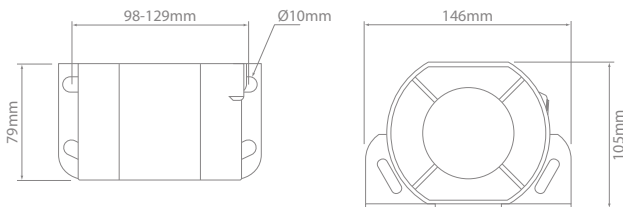


Tonal Reversing Alarms



Deutsch DT Connector for IDC model

SA800, SA800IDC



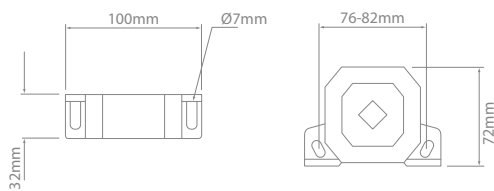
SA917



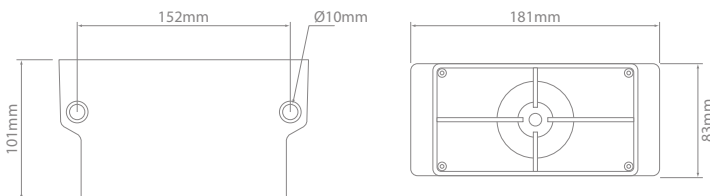
Tonal Self-Adjusting – Heavy Duty

Part No.	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit	Cable Length (mm)
SA800	87 – 112	1.9	0.3	Dome Speaker	300
SA800IDC	87 – 112	1.9	0.3	Dome Speaker	135
SA917 NEW	87 – 112	0.7 – 2.8	0.6	Speaker	150

IDC Model – Fitted with Deutsch DT Series 2 pin connector.
SA917 is not a Brigade product.



SA400



777



Tonal Self-Adjusting – Medium Duty

Part No.	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit	Cable Length (mm)
SA400	87 – 102	1.25	0.2	Speaker	1000
777 NEW	90/107/112	1.1 – 1.5	0.8	Driver	350

777 is not a Brigade product.



Tonal Reversing Alarms

Tonal Manual-Adjusting

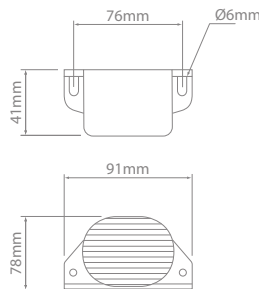


BA32NS



- Double engage reverse gear to temporarily mute the alarm.
- Auto resets when reverse gear is disengaged.
- Environmentally sealed – IP68.
- Epoxy filled for maximum vibration resistance.
- Can be steam & pressure cleaned.
- Multi-voltage.
- 2 year warranty.

Voltage : 12–24V
Body : AES
Vibration : 10G
EMC : CE, C-Tick & 'e' marked
Standards : Conforms to SAE J994 environmental
Operating Temperature : -40°C to 60°C
Ingress Protection : IP68



Self-Adjusting vs Manual-Adjusting

Self-adjusting reversing alarms utilise a small hidden and highly robust microphone to measure ambient SPL. They then self-adjust their own SPL, up or down, to maintain an output of just 5-10dB louder than the surrounding environment.

Manual-Adjusting reversing alarms temporarily mute the output when the operator double engages reverse gear. The alarm will reset automatically once reverse gear is disengaged.

Check with local regulations for suitability of this type of alarm in regards to applicable laws / regulations.

Tonal Manual-Adjusting – Medium Duty

Part No.	Type	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit	Cable Length (mm)
BA32NS	Medium Duty	0 – 90	1.1	0.2	Speaker	1000

Tonal Reversing Alarms

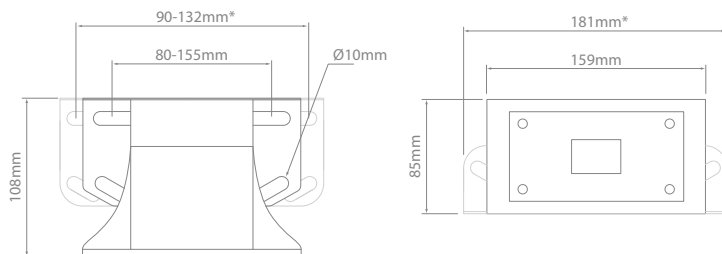
Tonal Fixed Volume

- Frequency optimised for construction equipment in heavy duty models.
- 'Dome Speaker' technology.
- Self cleaning port in heavy duty models.
- Deutsch connector on IDC models.
- Environmentally sealed – IP68.
- Epoxy filled for maximum vibration resistance.
- Can be steam & pressure cleaned.
- Multi-voltage.
- Lifetime warranty.



BA560

Voltage : 12–24V
Body : Heavy Duty Glass Reinforced Nylon
 Medium Duty AES
Vibration : 10G
EMC : CE, C-Tick & 'e' marked
Standards : Conforms to SAE J994 environmental
Operating Temperature : -40°C to 85°C
Ingress Protection : IP68





Deutsch DT Connector for IDC model

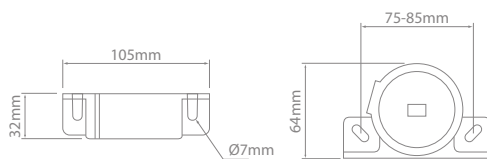


BA890IDC

Tonal Fixed Volume – Heavy Duty

Part No.	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit	Cable Length (mm)	Bracket
BA890	112	1.9	0.5	Dome Speaker	300	Normal
BA890IDC	112	1.9	0.5	Dome Speaker	135	Normal
BA891 	112	1.9	0.5	Dome Speaker	300	*Wide
BA891IDC 	112	1.9	0.5	Dome Speaker	135	*Wide

IDC Models – Fitted with Deutsch DT Series 2 pin connector.



Tonal Fixed Volume – Medium Duty

Part No.	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit	Cable Length (mm)
BA560	97	1.25	0.2	Speaker	1000
BA570	102	1.25	0.3	Speaker	1000



Tonal Reversing Alarms

Economy Fixed Volume



585-1

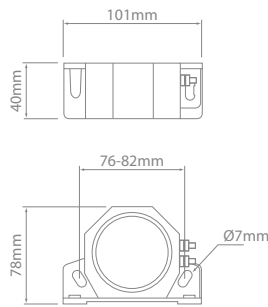


- Ideal for price conscious applications.
- Sealed housings.
- 585-1 epoxy filled for maximum vibration resistance.
- Multi-voltage.
- 2 year warranty.

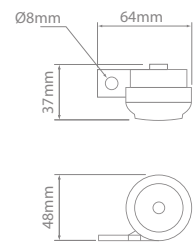
Body : AES
Vibration : 10G
EMC : BA390, 585-1 CE & 'e' marked
 BA390 C-Tick
Operating Temperature : -40°C to 60°C
Ingress Protection : 585-1 IP67
 BA390 IP66



585-1



BA390



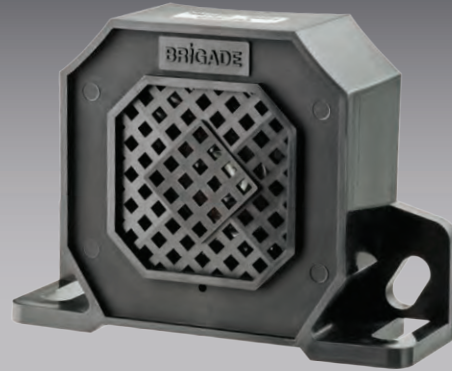
Economy Fixed Volume – Medium Duty

Part No.	Voltage	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit
585-1	12–80	97	1.3	0.1	Speaker
BA390	12–24	90	2.9	0.05	Piezo Ceramic

Tonal Reversing Alarms

Dual Function

- Alternating tone as used on scissor lifts or platforms.
- Environmentally sealed – IP68.
- Epoxy filled for maximum vibration resistance.
- Can be steam & pressure cleaned.
- Multi-voltage.
- 2 year warranty.



Voltage : 12-24V
Body : AES
Cable Length : 1m
Vibration : 10G
EMC : CE, C-Tick & 'e' marked
Standards : Conforms to SAE J994 environmental
Operating Temperature : -40°C to 85°C
Ingress Protection : IP68



Dual Function

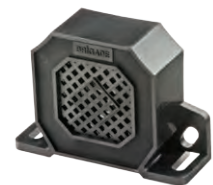
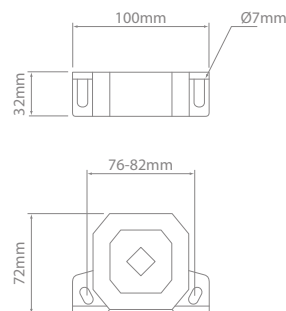
Dual Function warning alarms provide two types of audible warning in the one unit.

The first is a standard tonal reversing alarm sound, warning of an approaching / reversing vehicle.

bleep...bleep

The second is an alternating 'dual tone' sound that can be used to warn of dangers specific to certain machines or equipment eg; scissor lift actuation, rotating drive shafts, extending outriggers, etc.

bleep... bleep... bleep... bleep



Dual Function Fixed Volume – Medium Duty

Part No.	SPL – dB(A) @ 1m	Frequency – kHz	Current Draw (A)	Sounder Unit
DF470	102	1.25	0.3	Speaker

