

A white rectangular electronic component, the Vx Aviation AL-1A Tone Annunciator, is centered in the image. It features a grey dome-shaped speaker at the top, two blue RJ45 ports on the front, and two gold-plated screw terminals at the bottom. A white label on the front provides technical specifications and model information. The background is a blue-tinted circuit board with various component labels and traces.

# Vx Aviation AL-1A

Tone Annunciator

Beep Rate      Tone Freq.

Vx Aviation  
AL-1A

Tone Annunciator  
VX-08003A1

## Installation Guide

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# AL-1A

## Tone Annunciator

### Description

The AL-1A device is a tone annunciator module for aircraft applications such as stall or oil pressure warning systems. It senses either high-level or low level inputs from switches or sensors and generates a pulsed (beeped) tone in the aircraft audio system.

All of the electronics are contained in a 15-pin D-subminiature connector backshell, making the device compact, light and easy to install.

The tone is adjustable in both frequency and beep rate so that several distinctive annunciators may be provided in one installation.

The tone output is approximately a 12 volt peak-to-peak waveform driving through a 5.6 K $\Omega$  resistor. It maybe connected directly to a high-level auxiliary input of an intercom or audio panel.

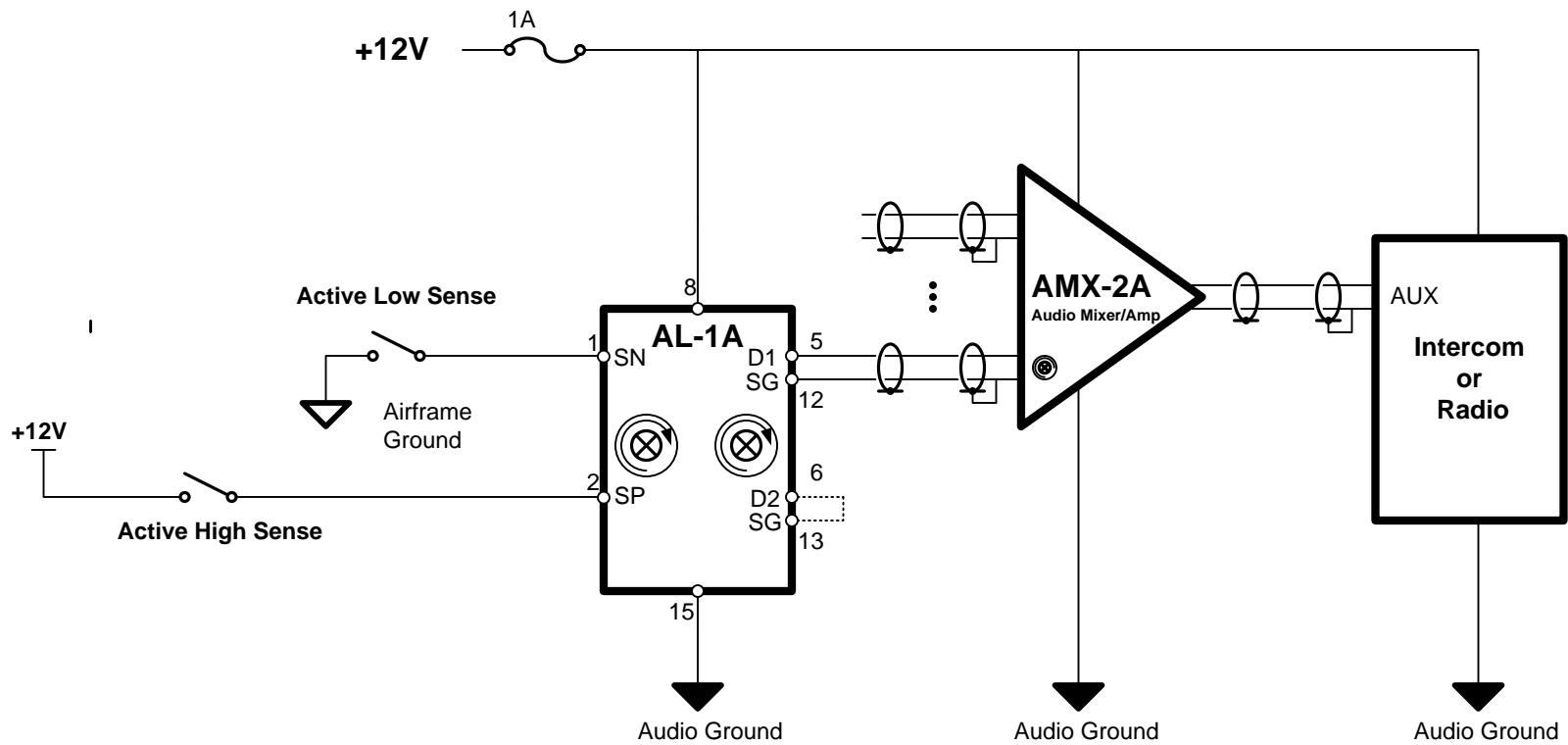
To attenuate the output signal, a 620  $\Omega$  resistor is provided internally in series with the normal output. Grounding this resistor will provide a 20 dB reduction in audio tone level (to about 1.2 volts peak-to-peak). Use this function if necessary in the application.

The inputs have 2 k $\Omega$  pull-up or pull-down resistors to provide wetting current to external switches or sensors. Wetting current helps to keep switches and relay contacts clean by providing a small amount of current that burns off contamination.


Usually, only one sense input (SN or SP) is used at a time. SN is used for sensing inputs that are grounded, while SP is used for sensing inputs that are switched to +12 volts. It is also possible to use both inputs to sense two separate circuits—one low going (grounded) and the other high going (+12 volts). The tone will sound if either input is activated.

### Technical Summary

- ❑ Inputs:
  - ❑ One active low with 2 k $\Omega$  pull-up
  - ❑ One active high with 2 k $\Omega$  pull-down
- ❑ Audio output:
  - ❑ 12 V<sub>pk-pk</sub>, 5.6 K $\Omega$  series resistance
  - ❑ 1.2 V<sub>pk-pk</sub>, with internal 620 ohm resistor grounded
- ❑ Tone frequency typically adjustable from 400 Hz to 4 kHz
- ❑ Beep rate typically adjustable from 1 Hz to 10 Hz
- ❑ Less than 10 mA current draw



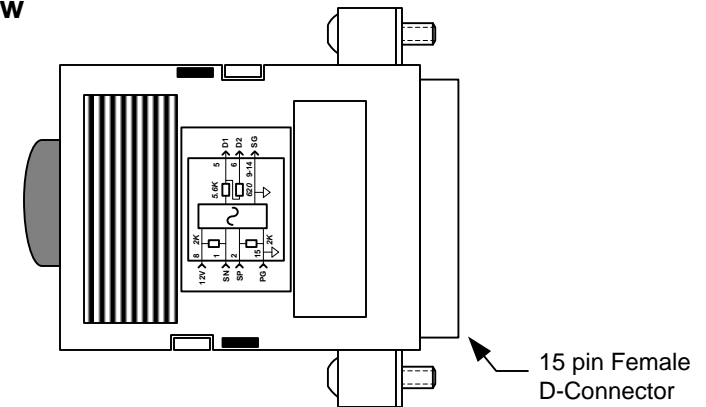
**Typical Application**  
**AL-1A Tone Annunciator used with**  
**AMX-2A Audio Mixer Amplifier and Intercom**

	<b>Vx Aviation</b>		
	<b>AL-1A</b> <b>Tone Annunciator</b>		
Drawn	V. Little	DWG NO	REV
	VX-08003	VXD-0804003	A4
Date	2008.05.03	SCALE	SHEET
	None		3 OF 4

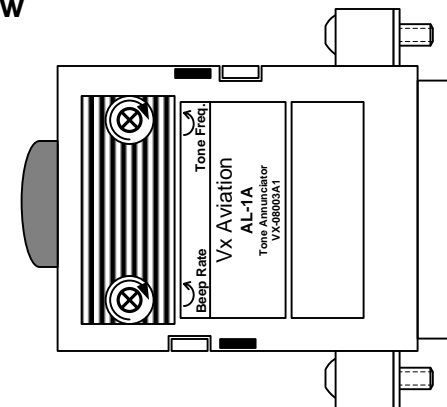
AL-1A Tone Annunciator Pin Description			
DB 25F Pin	Pin Name	Function	Connect To
1	SN	Negative Sense Input	Ground switched contact or sensor. Internal 2 k $\Omega$ pull-up. Tone will enabled when SP is high (12 volts) or SN is low.
2	SP	Positive Sense Input	Power switched contact or sensor. Internal 2 k $\Omega$ pull-down. Tone will enabled when SP is high (12 volts) or SN is low.
3-4		Reserved	No Connection
5	D1	Primary Output	Auxiliary input of Intercom or Audio Mixer. Output has a series 5.6 k $\Omega$ series resistor.
6	D2	Secondary Output	SG (Signal Ground) to attenuate the Primary Output by 20 dB.
7		Reserved	No Connection
8	12V	Power Input.	10-14 volt power. <b>DO NOT EXCEED 16 Volts.</b> 10 mA maximum current consumption.
9-14	SG	Signal Ground.	Shield and Audio grounds as required.
15	PG	Power Ground.	Power Ground. Internally connected to SG.

Electrical Specifications Over Ambient Temperature Range						
Parameter	Function	Min	Typ	Max	Units	Notes
T <sub>A</sub>	Ambient Operating Temperature	-40	25	50	Degrees Celcius	Non-condensing
V <sub>CC</sub>	Operating Voltage on 12V input	10	14.2	16	Volts DC	Protect VCC with 1 Amp Fuse or Breaker
I <sub>CC</sub>	Current Drain			10	mA DC	
P <sub>OUT</sub>	Primary Output Voltage		12		V <sub>pp</sub>	Primary Output Unloaded
P <sub>OUT</sub>	Primary Output Voltage		1.2		V <sub>pp</sub>	Primary Output. Loaded with 620 $\Omega$ or Secondary Output connected to SG

Back View



Front View



	<h1>Vx Aviation</h1>		
	<h2>AL-1A Tone Annunciator</h2>		
Drawn	V. Little	DWG NO	REV
	VX-08003	VXD-0804003	A4
Date	2008.05.03	SCALE	None
		SHEET	4 OF 4