ASM-AWG08

AWG08-001
Audio Warning Generator

INSTALLATION AND OPERATION MANUAL

Document # AWG08-IOAWG08

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The status of this installation and operation manual is controlled by the revision shown on the title page. The status of each section is controlled by revision shown in the footer of each page. All revisions affecting sections of this manual have been incorporated.

AEM MANUAL REVISIONS

Section	Revision Number	Revision Description	Date
Cover	Rev: 1.01	ECO 1078: • Added "Document # AWG08-IOAWG08" to the Cover Page	Jan 21, 2019
All	Rev: 1.00	Initial release	Nov 26, 2018

Table of Contents

Section 1.0 Description

1.1 Introduction

Information in this section consists of product description, design features and specifications for the AWG08 audio warning generator. All derivative product information will be contained in the applicable manual supplement, which may be obtained from AEM as required.

Review all notes, warnings and cautions.

1.2 Product Description

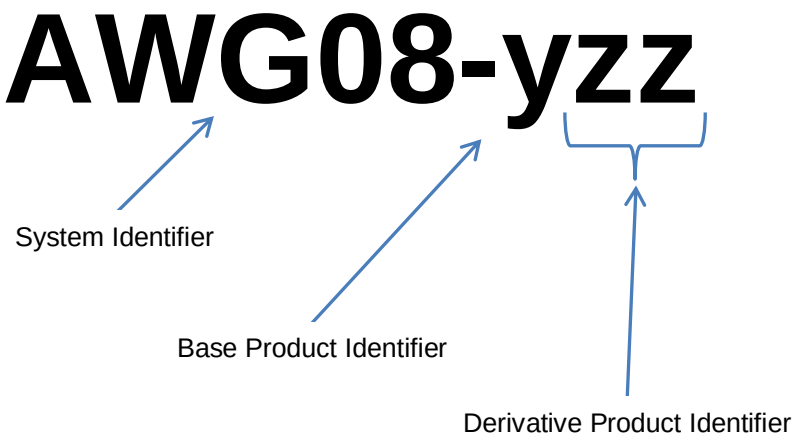
The AWG08 Audio Warning Generator is a bulkhead mount unit intended for applications where an audible warning is desired by the operator. The AWG08 can contain up to eight warnings in the form of a tone or voice or combination thereof. The AWG08 provides two un-switched, adjustable (direct) auxiliary audio inputs to be summed with the warning audio. Pre-summed input level is adjustable via externally accessible trimpots. The AWG08 has two isolated and independently adjustable audio outputs, with built-in short circuit protection.

The AWG08 can playback up to eight stored, audible warnings from individual trigger inputs. The audible warnings are configurable using a personal computer (PC) Application. The audible warnings are stored in an internal non-volatile memory and are user configurable to playback once (Single Shot) or to playback continuously (Repeating).

The AWG08 can be configured as master/slave combinations to daisy chain multiple units.

The AWG08 includes a warning active output which is intended to connect to an external relay or an external annunciator(s). The warning active output is active if the AWG08 is playing an audible warning.

1.2.1 Product Identifier Description

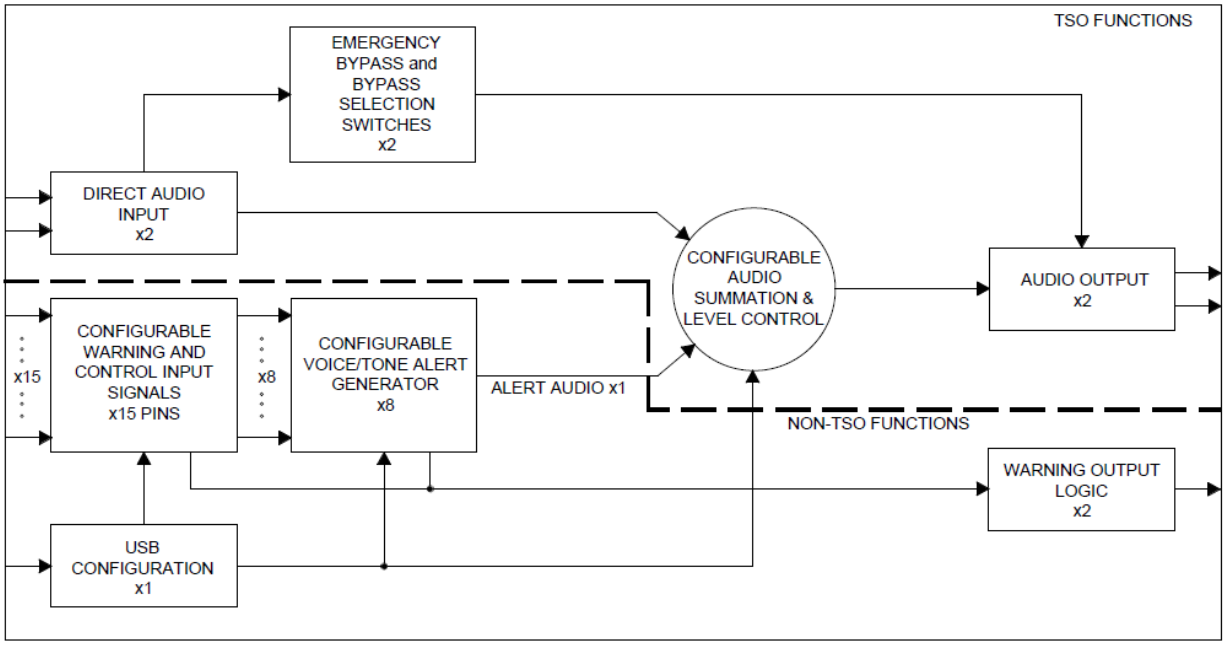


1.3 Design Features

This section contains descriptions of the AWG08-001 design features and default factory settings.

1.3.1 TSO and Non-TSO Functions

The AWG08 contains qualified TSO and qualified Non-TSO functions. The block diagram below provides a visual representation of the Non-TSO and TSO functions in the AWG08. The Non-TSO functions will be indicated throughout the document headings as “[Non-TSO]”.



1.3.2 Warning Audio Storage [Non-TSO]

The AWG08 is able to store up to eight stored digitally sampled warning tones or messages. The warnings are configurable by use of a PC Application. The warning's digitally sampled data is stored on internal non-volatile memory.

The AWG08 may be factory configured to store four warnings/messages with extended message lengths.

The AWG08 utilizes memory modules with a playback endurance of >100k cycles and message retention of >10 years.

The AWG08-001 user configurable audio is preloaded from factory with the following warnings in their respective trigger locations as described below:

Trigger Position	File Name	Pre-loaded Message Length (s)	Max Message Length (s)
Trigger 1	Voice Engine Fire Female.wav	~1.0	85 /170
Trigger 2	Voice Rotor High Male.wav	~1.0	85 /170
Trigger 3	Voice Rotor Low Male.wav	~1.0	85 /170
Trigger 4	VA Pull Up Female.wav	~3.2	85 /170
Trigger 5*	Alert OVERSPD.wav	~0.9	85 / -
Trigger 6*	Voice Altitude Female.wav	~0.8	85 / -
Trigger 7*	Voice Decision Height Male.wav	~1.0	85 / -
Trigger 8*	Alert GEAR.wav	~1.8	85 / -

*__Note:__ These Triggers can be disabled with a factory only configuration setting. Disabled triggers double the available maximum message length for Triggers 1 – 4. Triggers cannot be disabled individually. (Factory Setting Only)

1.3.3 Warning Audio Playback [Non-TSO]

The AWG08 is able to playback up to eight stored digitally sampled warning tones or messages from individual trigger inputs. Each trigger input has fixed playback priority and configurable settings for each trigger. A warning with the highest trigger priority will playback first. Any warning playback will be completed before the start of the next warning playback. Multiple warnings will playback in priority order. If a higher priority warning input is triggered during a lower priority playback; the subsequent warning playback will be the higher priority warning. Warning trigger 1 has the highest priority and warning trigger 8 has the lowest priority.

Warnings are configurable by the user to playback once (Single Shot) or to playback continuously (Repeating). Single shot warnings playback once for each trigger event and cannot be canceled. All repeating warnings playback a minimum of one time before being eligible for cancellation.

The AWG08-001 user configurable playback type is preloaded from the factory with the following settings:

Trigger	Fixed Priority	Playback Type*
Trigger 1	Priority 1	Repeating
Trigger 2	Priority 2	Repeating
Trigger 3	Priority 3	Repeating
Trigger 4	Priority 4	Repeating
Trigger 5	Priority 5	Repeating
Trigger 6	Priority 6	Single Shot
Trigger 7	Priority 7	Single Shot
Trigger 8	Priority 8	Repeating

***Note:** The Playback Type is user configurable between “Repeating or “Single Shot” trigger types for each trigger individually.

1.3.4 Warning Audio Cancelation [Non-TSO]

The AWG08 is capable of canceling repeated warning playback. Single shot warnings playback once for each trigger event and cannot be canceled. All repeating warnings playback a minimum of one time. Each warning must playback over its entire duration and will not be interrupted by warning audio cancel. Warning cancelation only cancels the repeating event, not the warning.

The AWG08-001 user configurable cancel input setting is pre-loaded from factory with the following:

Input Pin	Cancel Setting*
Warning Audio Cancel Input	Enabled

***Note:** Disabling the Warning Cancel Input also disables all trigger cancel modes below.

The AWG08-001 user configurable trigger cancel mode is pre-loaded from factory with the following settings:

Trigger	Cancel Mode*
Trigger 1	Enabled
Trigger 2	Enabled
Trigger 3	Enabled
Trigger 4	Enabled
Trigger 5	Enabled
Trigger 6	Disabled
Trigger 7	Disabled
Trigger 8	Enabled

***Note:** The trigger Cancel Mode is user configurable between “Enabled” or “Disabled” Cancel types for each trigger individually.

1.3.5 Warning Trigger Inputs [Non-TSO]

The AWG08 has up to eight individual warning trigger inputs. Each warning trigger input plays back the respective warning audio when the input detects a voltage signal level which is user configurable. The configurable input state can detect a change from NULL/POS to GND (Active Low) or from NULL/GND to POS (Active High) transition.

The AWG08-001 user configurable input trigger state is pre-loaded from factory with the following:

Input Trigger	State*
Trigger 1	Active Low
Trigger 2	Active Low
Trigger 3	Active Low
Trigger 4	Active Low
Trigger 5	Active Low
Trigger 6	Active Low
Trigger 7	Active Low
Trigger 8	Active Low

***Note:** The state is user configurable between “Active High” or “Active Low” trigger types for each trigger individually.

1.3.6 Warning Audio Test [Non-TSO]

The AWG08 includes a warning audio test (WARN AUD TEST) feature with a user configurable input state. When triggered, warning audio test plays back all stored warnings/messages in priority order. The test feature tests audio playback only.

The AWG08-001 user configurable input pin state is pre-loaded from factory with the following:

Input Pin	State*
Warning Audio Test	Active Low

***Note:** The state is user configurable between “Active High” or “Active Low” trigger types.

1.3.7 Warning Trigger Disable [Non-TSO]

The AWG08 includes a warning trigger input disable feature with a user configurable input state. When triggered, all warning audio input triggers (trigger 1 through trigger 8) deactivate and no longer trigger warning message playback. Warning trigger input disable (WARN TRIG DISABLE) does not interrupt warning playback but does cancel any warning set to repeated playback.

The AWG08-001 user configurable input pin state is pre-loaded from factory with the following:

Input Pin	State*
Warning Trigger Disable	Active Low

***Note:** The state is user configurable between “Active High” or “Active Low” trigger types.

1.3.8 Slave Input [Non-TSO]

The AWG08 includes a slave feature which is not user configurable for input state and only detects an active low trigger. If the slave feature is triggered the AWG08 enters a suspended playback mode and will act as a secondary (slave) device. The master output is triggered when the slave input is triggered to cascade priority. During this mode, the AWG08 will accept and remember triggered warnings but will not play back the warning regardless of warning type (repeating or single shot). Once the slave pin is released, the secondary (slave) AWG08 will playback all active or previously active warnings in priority order.

The slave feature is disabled by default. The slave setting is configured using the “Enable Master/Slave control” under audio settings in AWG-APS. The AWG08-001 user configurable setting is pre-loaded from factory with the following:

Audio Setting	Check Box*
Enable Master/Slave Control	Unchecked

***Note:** Disabling Master/Slave Control disables the slave input as well as the external warning active input.

1.3.9 Master Output [Non-TSO]

The AWG08 features a Master output which is intended to connect to the slave input of a second AWG08. The Master output is triggered if any valid warning is triggered, queued or currently playing back warning audio.

1.3.10 External Warning Active Input [Non-TSO]

The AWG08 includes an external warning active input feature which can be used by a higher level warning system (e.g. aircraft warning panel). It is not user configurable for input state and only detects an active low trigger. If the ext warning active is triggered the AWG08 enters a suspended playback mode. The AWG08 will accept and remember triggered warnings but will not play back the warning regardless of warning type (repeating or single shot).If a warning is triggered, the master output is triggered. Once the external warning active input pin is released, the AWG08 will playback all active or previously active warnings in priority order.

The external warning active feature is capable of muting the audio inputs to the AWG08 if the “Mute Inputs on Tone Playback” setting is enabled. This feature is normally disabled by default.

Audio Setting	Check Box*
Mute Inputs on Tone Playback	Unchecked

***Note:** Disabling Mute Inputs on Tone Playback disables the ability to mute inputs on internal tone playback as well as with a triggered external warning active input.

The external warning active feature is disabled by default. The external warning active configuration setting is configured using the “Enable Master/Slave control” setting under audio settings in AWG-APS. The AWG08-001 user configurable setting is pre-loaded from factory with the following:

Audio Setting	Check Box*
Enable Master/Slave Control	Unchecked

***Note:** Disabling Master/Slave Control disables the slave input as well as the external warning active input.

1.3.11 Warning Audio Pause [Non-TSO]

The AWG08 contains a warning audio pause feature which allows warning audio playback to be suspended while warning audio pause is triggered. It is not user configurable for input state and only detects an active low trigger.

1.3.12 Emergency Mode

The AWG08 includes an emergency feature which bypasses the internal audio pathways and warning generator. Emergency mode can be activated by an externally grounded switch, when the AWG08 power supply receives less than 12 - 14Vdc, or if the AWG08 enters maintenance mode.

The emergency mode bypass pathway may be adjusted using the field adjustable dip switches. An image of the switch locations on the AWG08 is shown in section 2.4. Details on allowable switch settings are found in section 2.4.5. The default AWG08-001 field adjustable settings for the emergency audio path are listed below:

Emergency Audio Option	State	Switch S100	Switch S101
Dir Audio Input 1 Connected To	Audio Output 1	On	Off
Dir Audio Input 2 Connected To	Audio Output 2		

1.3.13 Maintenance Mode [Non-TSO]

The AWG08 incudes a maintenance mode feature which is activated by connecting a Personal Computer (PC) via USB cable to the AWG08 USB connector. Maintenance mode automatically activates Emergency Mode in the AWG08-001.

The AWG08 maintenance mode allows the user configuration settings and warning audio files to be modified by a connected PC. The AWG08 does not require aircraft power to modify the user configuration settings and warning audio files.

1.3.14 Audio Options and Configuration [Non-TSO]

The AWG08 features user configurable audio settings as well as field adjustable audio settings. The AWG08 contains a user configurable summing network and can mute input audio on warning playback. The audio inputs, audio outputs levels and warning tone levels are field adjustable by use of externally accessible trimpots.

The AWG08-001 user configurable audio options are pre-loaded from factory with the following settings:

Audio Option	Setting
Dir Audio Input 1 Connects To	Audio Output 1 **
Dir Audio Input 2 Connects To	Audio Output 2 **
Mute Inputs on Tone Playback	Disabled*

***Note:** These settings are user configurable between “Enabled” and “Disabled” individually.

****Note:** Adjusting these settings affects the factory set output level. These settings are user configurable between, “Audio Output 1”, “Audio Output 2”, “Audio Output 1 & 2” and “None” individually.

1.3.15 Warning Active Output [Non-TSO]

The AWG08 features a warning active output (WARN ACTIVE OUT) which is intended to be connected to an external relay or external annunciator(s). The warning active output (WARN ACTIVE OUT) is triggered if any valid warning is currently playing back warning audio.

1.4 Specifications

1.4.1 Electrical Specifications

1.4.1.1 Input Operating Voltage

Normal Operating Conditions:

Nominal:	+28.0 Vdc
Maximum:	+30.3 Vdc
Minimum:	+22.0 Vdc
Emergency:	+18.0 Vdc

Abnormal Operating Conditions:

Nominal:	+28.0 Vdc
Maximum:	+32.2 Vdc
Minimum:	+20.5 Vdc

Input Current:

0.3 A maximum @ 28.0 Vdc
0.3 A maximum @ 5.0 Vdc (USB Connection)

Protection:

Fuse:	0.5A Slow Blow
Reverse Polarity:	Power supply inhibited upon +28 Vdc power applied to GND

1.4.1.2 Input Signals

Warning Trigger Inputs [Non-TSO]

Quantity:	8
Circuit Type:	Configurable Active High or Active Low
Input Active High:	≥ +14.5 Vdc, <5mA sink
Input Active Low:	≤ +1.0 Vdc, <5mA source
Input bias:	5 kΩ Internal pullup to +5 Vdc
Input Protection:	Diode protected to +45 Vdc maximum

Warning Audio Cancellation Input [Non-TSO]

Quantity:	1
Circuit Type:	Configurable Active High or Active Low
Input Active High:	≥ +14.5 Vdc, <5mA sink
Input Active Low:	≤ +1.0 Vdc, <5mA source
Input bias:	5 kΩ Internal pullup to +5 Vdc
Input Protection:	Diode protected to +45 Vdc maximum

Warning Trigger Input Disable Input [Non-TSO]

Quantity:	1
Circuit Type:	Configurable Active High or Active Low
Input Active High:	≥ +14.5 Vdc, <5mA sink
Input Active Low:	≤ +1.0 Vdc, <5mA source
Input bias:	5 kΩ Internal pullup to +5 Vdc
Input Protection:	Diode protected to +45 Vdc maximum

Warning Audio Test Input [Non-TSO]

Quantity:	1
Circuit Type:	Configurable Active High or Active Low
Input Active High:	≥ +14.5 Vdc, <5mA sink
Input Active Low:	≤ +1.0 Vdc, <5mA source
Input bias:	5 kΩ Internal pullup to +5 Vdc
Input Protection:	Diode protected to +45 Vdc maximum

Direct Audio Input

Quantity:	2
Circuit Type:	Single Ended
Rated Level:	2.5 Vrms ± 10%
Impedance:	2.2 kΩ ± 10%
Adjustment Range:	24 dB
Input Protection:	Diode protected to ±25 Vpk maximum DC bias tolerant*

Note: Configurable input summation settings may affect the factory set output level. Adjustments may be made using the field adjustable settings to compensate for the change.

*Note: Emergency mode signals pass through with no AC coupling or DC terminations.

Slave Input [Non-TSO]

Quantity:	1
Circuit Type:	Active Low
Input Active:	≤ +1.0 Vdc
Input Current:	<5 mA source
Input Protection:	Diode protected to +45 Vdc maximum

External Warning Active Input [Non-TSO]

Quantity:	1
Circuit Type:	Active Low
Input Active:	≤ +1.0 Vdc
Input Current:	<5 mA source
Input Protection:	Diode protected to +45 Vdc maximum

Emergency Input

Quantity:	1
Circuit Type:	Active Low
Input Active:	≤ +1.0 Vdc
Input Current:	<5 mA source
Input Protection:	Diode protected to +45 Vdc maximum

Warning Audio Pause Input [Non-TSO]

Quantity:	1
Circuit Type:	Active Low
Input Active:	≤ +1.0 Vdc
Input Current:	<5 mA source
Input Protection:	Diode protected to +45 Vdc maximum

1.4.1.3 Output Signals

Audio Output

Quantity:	2
Circuit Type:	Single Ended
Rated Power:	100 mW (7.75 Vrms ± 10% in 600 Ω) **
(Tone Audio)	70 mW (6.50 Vrms ± 10% in 600 Ω) ^ **
Rated Load Impedance:	600 Ω ± 10%
Output Impedance:	≤ 60 Ω
Frequency Response:	≤ 3 dB from 300 Hz to 6 kHz
Distortion:	≤ 10% @ Rated Power, ≤ 10% @ 50% Rated Power, ≤ 3% @ 10% Rated Power,
Audio Noise Level:	≥ -60 dB from Rated Power
Adjustment Range:	
Output:	17 dB
Tone Audio:	18 dB
Output Protection:	Diode protected to ±25 Vpk maximum AC coupled (DC blocking)*

^Note: Internally generated 1 kHz sign wave measured at the audio output.

***Note:** Emergency mode signals pass through with no AC coupling or DC terminations.

****Note:** Configurable input summation settings may affect the factory set output level. Adjustments may be made using the field adjustable settings to compensate for the change.

Warning Active Output [Non-TSO]

Quantity:	1
Output Active:	GND (Active Low), <1 Vdc
Output Inactive:	+28 Vdc ± 20%,
Circuit Type:	2.2 kΩ Internal Pull-Up on Open Collector
Current Input:	250 mA maximum
Output Protection:	Diode protected to +45 Vdc maximum

Master Output [Non-TSO]

Quantity:	1
Output Active:	GND (Active Low), <1 Vdc
Output Inactive:	+28 Vdc ± 20%
Circuit Type:	2.2 kΩ Internal Pull-Up on Open Collector
Current Input:	250 mA maximum
Output Protection:	Diode protected to +45 Vdc maximum

Note: Pin intended for connection to AWG08 SLAVE input when multiple are installed in a Master/Slave configuration.

1.4.1.4 Bidirectional Signals

Programming Port [Non-TSO]

The AWG08 provides one externally accessible USB port for programming user configurable settings and loading of warning tone and message .wav files into the AWG08 internal audio storage.

1.4.2 Physical Specifications

Height	1.51” [38.4mm]
Length	3.51” [89.2mm]
Width	4.01” [101.9mm]
Weight	0.5 lbs max. (0.23 kg)
Connectors	1 x 44 pin High Density D-Sub Plug (Male) With V-lock Hardware 1 x USB Mini AB (Female)
Mounting	8 chassis mounting holes (Wide/Narrow orientations) Wide Flange Mounting: Qty 4 0.187 diameter holes Narrow Flange Mounting: Qty 4 0.187 diameter holes
Mounting Hardware	Bolt: 8-32 Panhead or equivalent Quantity: 4

1.4.3 Environmental Specifications

Temperature	-45 to +70°C (operating) -55 to +85°C (survival)
Altitude	35,000 feet max.
Humidity	95% Non-condensing
Operational Shock Crash Safety	6g for 11msec 20g for 11msec (impulse), 3 sec (sustained)
Vibration	Conforms to DO-160G category 'S & U2', waveforms C,L,F & F1

Note: Refer to Environmental Qualification Form located in Section 2 of this manual for complete details of the environmental categories.

1.4.4 Product Approval/Certification

Transport Canada: CAN-TSO-C139a Aircraft Audio Systems and Equipment

1.5 Product Limitations

1.5.1 Installation Procedures and Limitations

This article meets the minimum performance and quality control standards required by a technical standard order (TSO). Installation of this article requires separate approval.

The AWG08-001 is not intended for installations with exposure to T-PEDs. The AWG08-001 is intended for installation in a shielded enclosure (such as shielded avionics bay) as per the recommendations of RTCA/DO-214A section 2.5.11

1.5.2 USB Connector Bonding [Non-TSO]

The USB connector was not tested to any bonding specification and is not intended for permanent installation.

1.5.3 Audible Pop and Click Performance

Audible pop and click performance is dependant on the user configurable warning audio files and settings. Depending on the file and user configurable settings, it may not be possible to completely eliminate pops and clicks.

1.5.4 Power On Transients

The AWG08 emits an audible chirp during initial power application.

1.5.5 User Configurable Settings [Non-TSO]

AWG08 user configurable settings and warning changes require a PC with the latest version AWG-APS software installed. Contact AEM customer sales for the latest version of AWG-APS.

1.5.6 Embedded Programmer [Non-TSO]

The AWG08 functions without the use of a programmable microprocessor. The embedded programmer is not powered during flight and is intended to configure options within the AWG08 as a maintenance activity while the connected aircraft is powered down. The AWG08 embedded programmer is powered by a separate internal USB power supply. When the USB power supply is energized by a connected computer while the aircraft power is on, the AWG08-001 disables its internally stored audio playback circuitry and enables the emergency audio paths.

The embedded microprocessor (powered only during maintenance) communicates to a PC with a custom PC application.

The embedded programmer configures the onboard non-volatile warning storage and non-volatile digital switch settings during maintenance only. The performance of the non-volatile warning storage and non-volatile digital switch settings is unaffected by environmental conditions. The ability to change these configurations was tested in normal environmental conditions at room temperature only.

1.6 Additional Requirements

1.6.1 Bonding

Bonding Resistance: ≤2.5mΩ

End of Section 1.0

Section 2.0 Installation

2.1 Introduction

Information in this section consists of: unpacking and inspection procedures, installation procedures, post-installation checks, and installation drawings.

2.2 Unpacking and Inspection

Unpack the equipment carefully. Inspect the unit visually for damage due to shipping and report all such claims immediately to the carrier involved. Note that each unit should have the following:

- AWG08-001
- Acceptance Test Report
- Certificate of Conformity or Release certification
- USB Cable

Verify that all items are present before proceeding and report any shortage immediately to your supplier.

2.2.1 Warranty

All Anodyne Electronics Manufacturing Corp. (AEM) products are warranted for 3 years. See the website www.aem-corp.com/warranty for complete details.

2.3 Installation Procedures

2.3.1 Warnings

WARNING:
High volume settings can cause hearing damage. Proper personal protective equipment is required to prevent hearing damage.

2.3.2 Cautions

CAUTION:
The AWG08 inputs and outputs are adjusted from factory to achieve 100mW rated output into a 600 Ohm load for Audio Output 1 and 2.
The AWG08 audio outputs are not intended to drive load impedances less than 600 Ohms. Audio output or warning level adjustments to achieve clear and comfortable sound pressure levels may be required.

Warning audio output levels are dependent on the signal level set in the loaded warning file. All warning file signal levels should be verified to be similar.

CAUTION:
Ensure the summed warning level combined with the summed input audio level(s) does not exceed the maximum rated output level of 100mW into a 600 Ohm load. Input and output level adjustments may be required after making user configurable changes to the audio path adjustments listed in section 2.4.6.

Do not set AWG08 EMERG MODE SUMMING switches S100 and S101 both to the "On" position. Refer to section 1.3.12 and 2.4.5 for allowable settings. See section 2.4 to determine the settings location on the AWG08.

Disconnecting the USB cable from the AWG08 while changing settings to the unit may cause permanent damage to the AWG08.

2.3.3 Cabling and Wiring

All wire shall be selected in accordance with the original aircraft manufacturer's Maintenance Instructions or AC43.13-1B Change 1, Paragraphs 11-76 through 11-78. Unshielded wire types shall qualify to MIL-W-22759 as specified in AC43.13-1B Change 1, Paragraphs 11-85, 11-86, and listed in Table 11-11. For shielded wire applications, use Tefzel MIL-C-27500 shielded wire with solder sleeves (for shield terminations) to make the most compact and easily terminated interconnect. Follow the interconnect drawing in Section 2.7 as required.

Refer to the interconnect drawing in Section 2.7 for shield termination details. Aircraft harnessing shall permit the unit to be removed for easy access to all adjustments.

Maintain wire segregation and route wiring in accordance with the original aircraft manufacturers Maintenance Instructions.

Unless otherwise noted, all wiring shall be a minimum of 24 AWG. Reference the Interconnect drawing for additional specifications. Check that the ground connection is clean and well secured, and that it shares no path with any electrically noisy aircraft accessories such as blowers, turn and bank instruments or similar loads. Power to this unit must be supplied from a separate circuit breaker or fuse (fast blow), and not attached to any other circuit breaker without additional protection. Verify that the selected circuit breaker size and wire gauge are adequate for the installation using the techniques specified in AC43.13-1B Change 1, Paragraphs 11-47 through 11-51 and 11-66 through 11-69.

2.3.4 Post-Installation Checks

2.3.4.1 Voltage/Resistance Checks

Do not connect the AWG08-001 to the wiring harness until the following conditions are met.

Referencing the Interconnect drawing from Section 2.7, check the following:

a) Check P100 pins <1> for +28 Vdc relative to ground.
b) Check P100 pins <12, 13, 37> for continuity to ground (less than 0.5Ω).
c) Ensure all remaining wiring connections have been made per the aircraft wiring diagram.
d) Remove dmin dust covers from J100, DO NOT remove USB Dust cover

2.3.4.2 Power On Checks

Power up the aircraft's systems and confirm normal operation of all functions of the AWG08-001. Refer to Section 3 (Operation) for specific operational details.

a) Unusual buzzes, hums or other background audio are symptomatic of multiple grounds, or noisy external systems such as blowers or pumps sharing wiring with the audio system.

Upon satisfactory completion of all performance checks, make all required log book entries, electrical load, weight and balance amendments and other documentation as required by your local regulatory agency before releasing the aircraft for service.

2.3.4.3 User Configurable Settings [Non-TSO]

User configurable settings including warning audio, summed audio pathway configuration and input settings may be adjusted before installation using the PC programming software. The AWG08 may be connected to a PC with the latest version of AWG-APS software and does not require aircraft power to adjust these settings. It is recommended to have laptop computers connected to a power outlet while making changes to the setting of a connected AWG08 to ensure the laptop remains powered.

2.4 Adjustments and Connections

The unit is shipped from the factory with all adjustments set to the nominal test levels. Once installed in the aircraft, it may be desirable to change some of these settings to best suit the local operating environment. The adjustments have legends on them that correspond to the adjustment.

The accessible adjustments require the use of a Bourns H-90, H-91, H-92 or equivalent adjustment tool.

All adjustments are designed to allow an increase in level with clockwise rotation of the potentiometer.

2.4.1 Direct Audio Inputs

The direct audio inputs (DIR AUD IN) are adjusted based on their associated rated input level to achieve a specific internal level that is presented to the audio outputs. Any adjustment of these inputs will have a subsequent effect on the outputs.

2.4.2 Warning Level [Non-TSO]

The warning (TONE) level adjustment matches the output from the internal warning generation circuitry to the same internal level as the direct audio inputs (DIR AUD IN). Any adjustment of warning (TONE) level will have a subsequent effect on all the outputs.

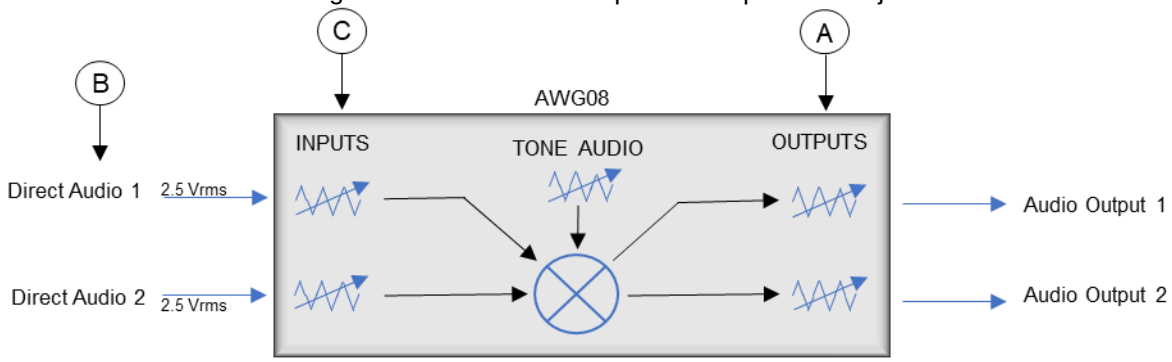
Note: Adjustment of warning (TONE) level should only be made after the audio outputs (AUDIO OUT) have been adjusted for each specific audio system installation.

2.4.3 Audio Outputs

The audio outputs (AUDIO OUT) are adjusted to meet the rated output levels and are based on the specific internally adjusted direct audio input (DIR AUD IN), and warning (TONE) level. These outputs can be adjusted using the (AUD OUT) level adjustment to better suit specific audio system installations.

2.4.4 Level Adjustments (Field Adjustable)

During installation, when setting the output levels, it may be necessary to adjust the AWG08. Refer to cautions section above for adjustment limitations. Determination of load and delivered power requirements for the aircraft installation configuration needs to occur prior to output level adjustment.



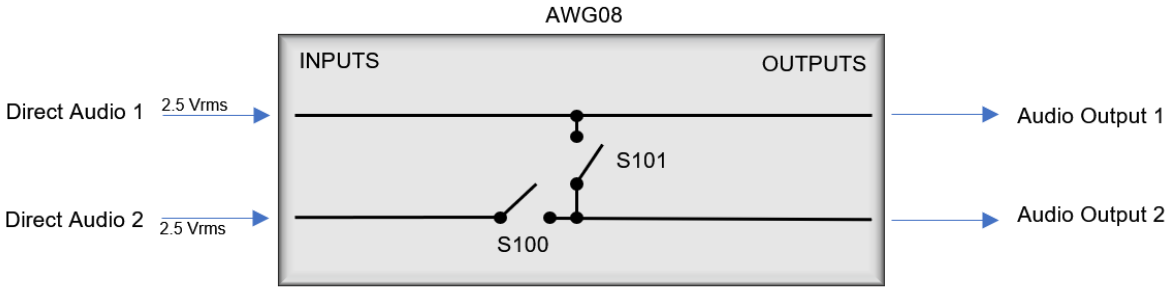
A. The preferred method is to only adjust the audio output (AUD OUT) potentiometers to achieve the desired level. Rated output is achievable when the inputs are known to be at their rated levels.

B. Ensure that the direct audio input (DIR AUD IN) levels being supplied from the aircraft audio systems are at their rated levels. If the rated input levels can not be met, the AWG08 will not be able to meet rated output.

C. The AWG08 direct audio input (DIR AUD IN) adjustments are only intended to attenuate known audio levels that are exceeding the rated input levels. Adjustment to any of the AWG08 direct audio inputs (DIR AUD IN) or warning (TONE) audio will have an impact on the associated output levels. When adjustments are made, re-check the other output levels supplied by the other inputs.

2.4.5 Emergency Audio Path Adjustments (Field Adjustable)

The emergency audio routing can be adjusted to change how the direct audio inputs (DIR AUD IN) connect to the audio outputs (AUDIO OUT) during emergency mode. Refer to cautions section above for adjustment limitations. Refer to Section 2.4 for an image of the switch locations.



In emergency mode the rated input levels will equal rated output levels. Emergency mode switch settings can impact the connected audio systems normal operational routing requirements. Connected unit specifications and emergency mode system routing requirements should be assessed before changes are made to the EMERG MODE SUMMING switch configuration.

The acceptable switch configurations for the emergency audio pathways are listed below:

Emergency Audio Option	State	Switch S100*	Switch S101*
Dir Audio Input 1 Connected To	Audio Output 1	On	Off
Dir Audio Input 2 Connected To	Audio Output 2		
Dir Audio Input 1 Connected To	Audio Output 1 & Audio Output 2	Off	On
Dir Audio Input 2 Connected To	None		
Dir Audio Input 1 Connected To	Audio Output 1	Off	Off
Dir Audio Input 2 Connected To	None		

***Note:** These settings are field adjustable between “On” and “Off” individually. ”On” implies the switch is connected (Closed) while “Off” implies the switch is disconnected (Open). Field adjustable settings are not user configurable with the PC application.

2.4.6 Audio Path Adjustments

Audio path routing is user configurable and can be adjusted using the AWG-APS PC application. This audio path routing is only valid while the AWG08 is not in emergency mode. Acceptable configurations are listed in the table below. Refer to cautions section above for adjustment limitations.

Audio Option	State
Direct Audio Input 1 Connected To	Audio Output 1
Direct Audio Input 1 Connected To	Audio Output 2
Direct Audio Input 1 Connected To	Audio Output 1 and Audio Output 2
Direct Audio Input 1 Connected To	None
Direct Audio Input 2 Connected To	Audio Output 1
Direct Audio Input 2 Connected To	Audio Output 2
Direct Audio Input 2 Connected To	Audio Output 1 and Audio Output 2
Direct Audio Input 2 Connected To	None
Direct Audio Input 1 & Direct Audio Input 2 Connected To	Audio Output 1**
Direct Audio Input 1 & Direct Audio Input 2 Connected To	Audio Output 2**
Direct Audio Input 1 & Direct Audio Input 2 Connected To	Audio Output 1 and Audio Output 2**
Direct Audio Input 1 & Direct Audio Input 2 Connected To	None*

***Note:** Both audio inputs can be disable. The AWG08 will only play warning audio on its audio outputs.
****Note:** Configurable input summation settings may affect the factory set output level. Adjustments may be made using the field adjustable settings to compensate for the change.

The direct audio inputs (DIR AUD IN) can be user configured to be muted during warning playback. After warning playback has completed, the direct audio inputs (DIR AUD IN) are unmuted. Audio path muting is user configurable and can be enabled/disabled using the AWG-APS PC application.

2.5 Accessories Required But Not Supplied

The accessible adjustments require the use of a Bourns H-90, H-91, H-92 or equivalent adjustment tool.

Installation kit p/n D44SV-IKC (crimp) is required to complete the installation. The kit consists of the following:

Qty	Description	Manufacturer	Mfr Part #	Part #
1	D-Sub, Socket, 44 Crimp, Locking	Positronic	ODD44F00JVL0	20-21-044
44	Contact, Socket, Crimp, 28-22 AWG	Amphenol	M39029/57-354	20-26-014

2.6 Continued Airworthiness

Maintenance of the AWG08 Audio Warning Generator is ‘on condition’ only. Periodic maintenance of this product is not required.

2.7 Installation Drawings

Use of the "#" symbol in the REV. column indicates that the document is listed elsewhere in the manual. Refer to the applicable AEM Part No. to locate the referenced document.

DOCUMENT	REV	DESCRIPTION	TYPE	SER. NO.
AWG08-001-403-0	1.00	Cabin PA Amplifier	Interconnect	73000+
AWG08-001-405-0	1.00	Cabin PA Amplifier	Connector Map	73000+
AWG08-001-521-0	1.00	Cabin PA Amplifier	Environmental Qualification Form	73000+
AWG08-001-922-0	1.00	Cabin PA Amplifier	Mechanical Installation	73000+

Section 2.0 ends following above documents

AWG08-001 INSTALLATION NOTES

NOTES:

1. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL UNSHIELDED WIRE SHALL BE SELECTED IN ACCORDANCE WITH AC43.13-1B CHANGE 1, PARAGRAPHS 11-76 THROUGH 11-78. WIRE TYPES SHOULD BE TO MIL-W-22759 AS SPECIFIED IN AC43.13-1B CHANGE 1, PARAGRAPHS 11-85, 11-86 AND LISTED IN TABLE 11-11. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.
2. CABLE LENGTH NOT TO EXCEED 30 FT [9.14 M], UNLESS OTHERWISE SPECIFIED.

△3 CABLE LENGTH NOT TO EXCEED 3.3 FT [1.0 M] MULTIPLE CONNECTOR PINS. ONE OF THE MULTIPLE CHASSIS GND PINS SHALL BE CONNECTED.

△4 SHIELDS SHOULD BE GROUNDED TO LOCAL AIRFRAME GROUND, UNLESS OTHERWISE SPECIFIED. SHIELD TERMINATION LENGTH NOT TO EXCEED 1 FT [0.3 M].

△5 CONNECTIONS INTENDED FOR MULTIPLE ALERT GENERATOR INSTALLATION.

△6 CABLE LENGTH NOT TO EXCEED 3.3 FT [1.0 M]. MULTIPLE CONNECTOR PINS.

△7 CONFIGURABLE INPUT. REFERENCE AWG08-001 INSTALLATION & OPERATION MANUAL FOR INPUT CONFIGURATION SETTING.

△8 SWITCHED TO POWER GROUND WHEN ACTIVE. CURRENT(SINK) 250mA MAX @ 28VDC.

△9 OPTIONAL. REQUIRED ONLY WHERE AWG08-001 IS INSTALLED IN MULTIPLE EQUIPMENT INSTALLATIONS WITH PRIORITY AUDIO WARNING REQUIREMENTS. SWITCH TO GROUND TO ASSERT PRIORITY.

△10 APPLY GROUND TO ENABLE EMERGENCY MODE.

△11 APPLY GROUND TO PAUSE WARNING AUDIO PLAYBACK.

DEFINITIONS:

N/C:	NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.
N/C SPARE:	NO CONNECTION INTERNALLY, BUT A SPARE WIRE SHALL BE INSTALLED IN THE WIRE HARNESS.
RESERVED:	MAY BE CONNECTED AND USED IN THE FUTURE. THE CIRCUITRY MAY BE PRESENT OR ADDED TO ACTIVATE THE FUNCTION. THE PIN MAY BE USED FOR TEST PURPOSES. THERE IS NO EXTERNAL CONNECTION.
RESERVED SPARE: (RSV SP)	RESERVED, BUT INSTRUCTIONS SHALL BE FOLLOWED TO ACTIVATE THE CIRCUITRY. A SPARE WIRE SHALL BE INSTALLED IN THE WIRE HARNESS.

	NAME	DATE
DRAWN	NMA	APR 18/18
CHECKED		APR 19/18
APPROVED		Apr 19/18

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES [MM]
TOLERANCES:
FRACTIONAL ±0.0625"
ANGULAR ±0.5°
TWO DECIMAL PLACE ±0.010"
THREE DECIMAL PLACE ±0.005"

MATERIAL: N/A

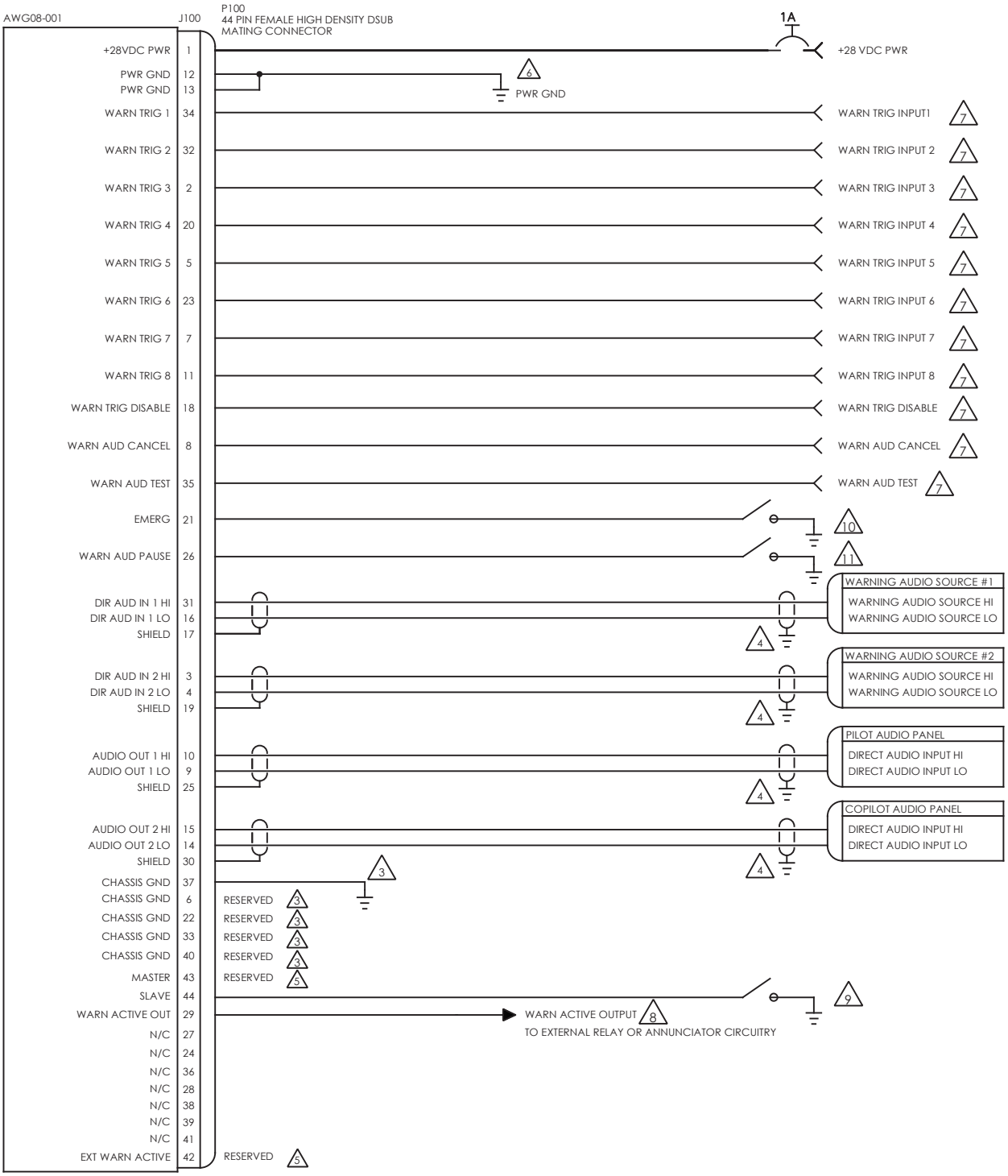
FINISH: N/A

ANODYNE ELECTRONICS MANUFACTURING CORP.
KELOWNA BC CANADA
(250)-763-1088
WWW.AEM-CORP.COM

TITLE: AUDIO WARNING GENRATOR INTERCONNECT

PAPER SIZE:	CAGE CODE	PART No.:	REVISION
A	L9015	AWG08-001	1.00

SCALE:	DO NOT SCALE DRAWING	DRAWING No.: 403-0	SHEET:1 of 2



	NAME	DATE
DRAWN	NMA	APR 18/18
CHECKED		APR 18/18
APPROVED		Apr 19/18

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES [MM]
TOLERANCES:
FRACTIONAL ±0.0625"
ANGULAR ±0.5°
TWO DECIMAL PLACE ±0.010"
THREE DECIMAL PLACE ±0.005"

MATERIAL: N/A

FINISH: N/A

ANODYNE ELECTRONICS MANUFACTURING CORP.
KELOWNA BC CANADA
(250)-763-1088
WWW.AEM-CORP.COM

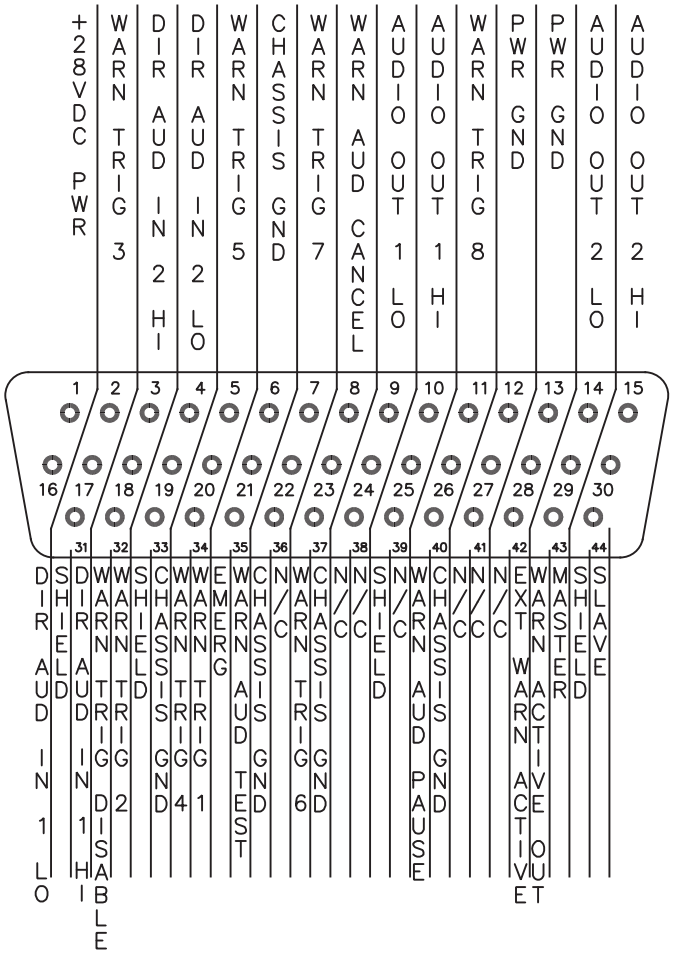
TITLE:
AUDIO WARNING GENERATOR INTERCONNECT

PAPER SIZE:	CAGE CODE	PART No.:	REVISION
A	L9015	AWG08-001	1.00

SCALE:	DO NOT SCALE DRAWING	DRAWING No.: 403-1	SHEET:2 of 2

P100

44 PIN D–MIN SOCKET
MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

	NAME	DATE
DRAWN	NMA	APR 18/18
CHECKED		APR 18/18
APPROVED		Apr 19/18

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES [MM]
TOLERANCES:
FRACTIONAL_____ ±0.0625"
ANGULAR_____ ±0.5°
TWO DECIMAL PLACE___ ±0.010"
THREE DECIMAL PLACE___ ±0.005"

MATERIAL: N/A

FINISH: N/A

ANODYNE ELECTRONICS MANUFACTURING CORP.
KELOWNA BC CANADA
(250)-763-1088
WWW.AEM-CORP.COM

TITLE:
AUDIO WARNING GENERATOR CONNECTOR MAP

PAPER SIZE:	CAGE CODE	PART No.:	REVISION
A	L9015	AWG08-001	1.00

SCALE:	DO NOT SCALE DRAWING	DRAWING No.: 405-0	SHEET:1 of 1

ENVIRONMENTAL QUALIFICATION FORM

Description: **Audio Warning Generator** Document: **AWG08-001-521-0100**

Part #: **AWG08-001** TSO #: **N/A**

Manufacturer's Specification and/or Other Applicable Specification:

Manufacturer: **Anodyne Electronics Manufacturing Corp.**

Address: **#15 - 1925 Kirschner Rd., Kelowna, BC, Canada. V1Y 4N7**

DO-160 Rev: **G**

Prepared By:	Checked By:	Approved By:
N.A. Nikolis Andrews Designer Nov 2 2018	DS Duane Stewart Designer Nov 2/18	TB Todd Blackstock R&D Manager Nov 5/18

Conditions	Section	Description of Conducted Tests
Temperature and Altitude	**4.0**	**Equipment tested to Category A2 C4**
Ground Survival Low Temp.	4.5.1	-55 °C
Short-Time Operating Low Temp.	4.5.1	-45 °C
Operating Low Temperature	4.5.2	-45 °C
Ground Survival High Temp.	4.5.3	+85 °C
Short Time Operating High Temp.	4.5.3	+70 °C
Operating High Temp.	4.5.4	+70 °C
In-flight Loss of Cooling	4.5.5	N/A
Altitude	4.6.1	+35,000 ft (+10,688 m)
Decompression	4.6.2	+8,000 ft to +35,000 ft (+2,438 to +10,668 m)
Overpressure	4.6.3	-15,000 ft (-4,572 m)
Temperature Variation	**5.0**	**Equipment tested to Category B** ± 5° C/min.
Humidity	**6.0**	**Equipment tested to Category A** 95% RH for 48 hrs.
Operational Shock and Crash Safety	**7.0**	**Equipment tested to Category B**
Operational Shocks	7.2.2	6g for 11 ms in all axes
Crash Safety (Impulse)	7.3.2	20g for 11 ms in all axes
Crash Safety (Sustained)	7.3.3	20g for 3 s in all axes

Conditions	Section	Description of Conducted Tests
Vibration	**8.0**	**Equipment tested to Category S** Profiles C & L **Equipment tested to Category U2** Profiles F and F1
Explosive Atmosphere	9.0	Category X, no test performed.
Waterproofness	10.0	Category X, no test performed.
Fluids Susceptibility	11.0	Category X, no test performed.
Sand and Dust	12.0	Category X, no test performed.
Fungus Resistance	13.0	Category X, no test performed.
Salt Spray	14.0	Category X, no test performed.
Magnetic Effect	**15.0**	**Equipment tested to Category Z** Deflection of 1°: 0 ≤ D ≤ 0.3 m.
Power input	**16.0**	**Equipment tested to Categories Z(XX)**
Voltage (Average Value DC)	16.6.1.1	Maximum Operating Voltage: +30.3 Vdc Nominal Operating Voltage: +28.0 Vdc Minimum Operating Voltage: +22.0 Vdc Emergency Operating Voltage: +18.0 Vdc
Momentary Power Interruptions(DC)	16.6.1.3	50 ms and 1 s
Normal Surge Voltage (DC)	16.6.1.4	As per DO-160G
Engine Starting Under Voltage (DC)	16.6.1.5	As per DO-160G
Voltage Steady State (DC)	16.6.2.1	Maximum Operating Voltage: +32.2 Vdc Normal Operating Voltage: +28.0 Vdc Minimum Operating Voltage: +20.5 Vdc
Low Voltage Conditions (DC)	16.6.2.2	N/A
Momentary Undervoltage Operation (DC)	16.6.2.3	+12 Vdc for 7 s
Abnormal Surge Voltage (DC)	16.6.2.4	+80.0 Vdc for 100 ms, +48.0 Vdc for 1 s.
Voltage Spike	**17.0**	**Equipment tested to Category A** 600 Vp for 10 µs Positive and negative spikes

Conditions	Section	Description of Conducted Tests
Audio Frequency Susceptibility	**18.0**	**Equipment tested to Category Z**
Ripple Voltage		0.6 Vpp from 10 to 200 Hz, to 1.6 Vpp from 0.2 to 1 kHz, to 4.0 Vpp from 1 to 15 kHz, to 0.6 Vpp at 15 kHz, to 0.004 Vpp at 148.5936 kHz
Induced Signal Susceptibility	**19.0**	**Equipment tested to Category ANE**
Magnetic Fields into Equipment	19.3.1	20 Arms @ 350 and 650 Hz
Electric Fields into Equipment	19.3.2	170 Vrms @ 400 Hz
Magnetic Fields into Cables	19.3.3	18 A•m @ 350 to 650 Hz,
Electric Fields into Cables	19.3.4	360 V•m from 350 to 650 Hz
Spikes Induced into Cables	19.3.5	Positive and negative spikes as per DO-160G
Radio Frequency Susceptibility	**20.0**	**Equipment tested to Category TT** (Reference Remarks: Item 3.)
Conducted RF Susceptibility	20.4	0.15 mA @ 10 kHz, to 0.36 mA @ 24 kHz, to 7.5 mA @ 24 kHz, to 7.5 mA @ 400 MHz
Radiated RF Susceptibility	20.5	SW/CW: 5 V/m from 100 to 400 MHz
Radio Frequency Emission	**21.0**	**Equipment tested to Category L**
Conducted RF Emission	21.4	Power lines: 150 kHz to 152 MHz Interconnecting Cables: 150 kHz to 152 MHz
Radiated RF Emission	21.5	100 MHz to 6 GHz
Lightening Induced Transient Susceptibility	**22.0**	**Equipment tested to Category XXZ2XX**
Pin Injection	22.5.1	N/A
Cable Bundle	22.5.2	Single Stroke Requirements: Waveforms 1/2, 3 and 4 Multiple Stroke Requirements: N/A Multiple Burst Requirements: N/A
Lightning Direct Effects test	23.0	Category X, no test performed.

Conditions	Section	Description of Conducted Tests
Icing	24.0	Category X, no test performed.
Electrostatic Discharge	**25.0**	**Equipment tested to Category A** 15,000 Vp, 10 positive and negative spikes.
Fire, Flammability	**26.0**	**Category C, qualified by analysis.** Compliant to 14 CFR FAR 25.853(a), Appendix F, Part I, (a)(1)(i) by analysis.

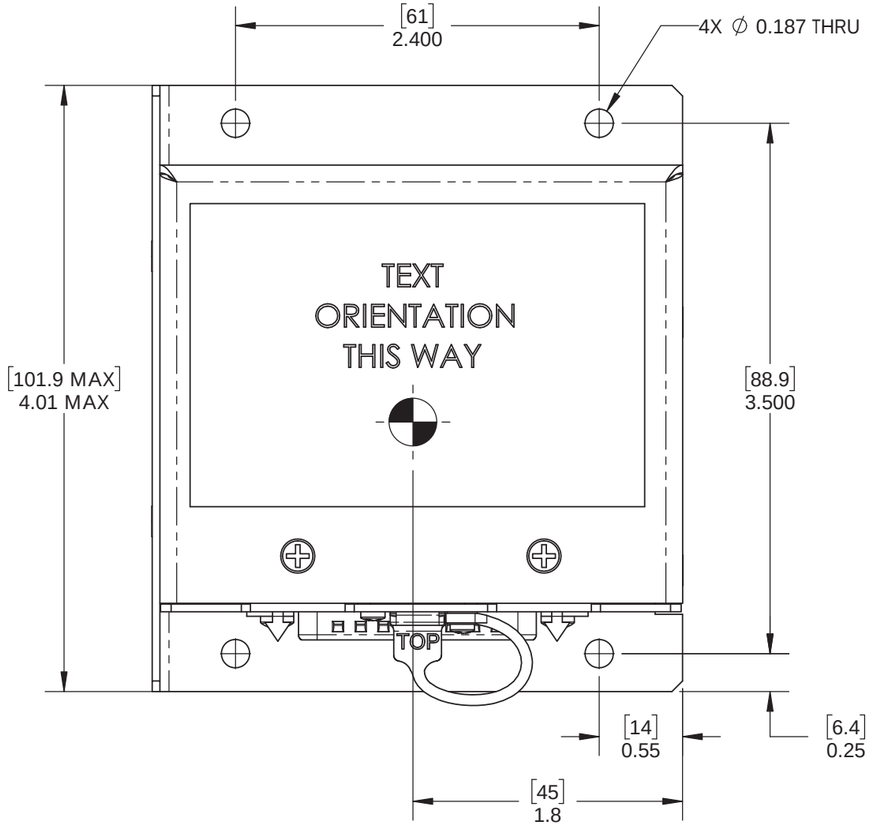
REMARKS

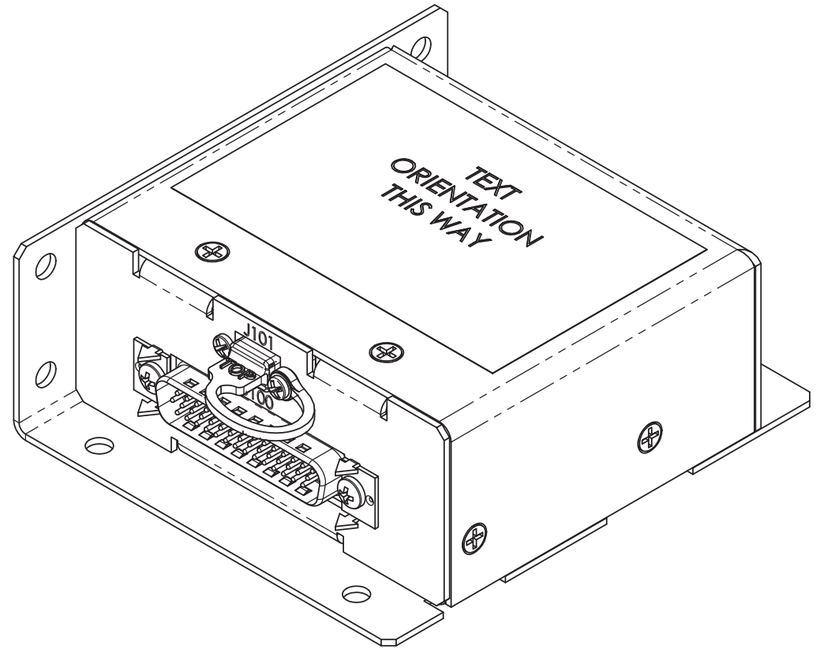
1. Sections 4 to 8,15 to 19, and 25 tests were conducted at Anodyne Electronics Manufacturing Corp (AEM) in Kelowna, BC.

2. Sections 20, 21 and 22 were tested at CKC Laboratories in Bothell, WA.

3. In Section 20 the equipment was tested with conducted RF Susceptibility levels and frequencies to satisfy the requirements of both DO-160G Sec 20.4 and DO-214A, Sec 2.5.11. The AWG08-001 is not intended for installations with exposure to T-PEDs. The AWG08-001 is intended for installation in a shielded enclosure (such as shielded avionics bay) as per the recommendations of RTCA/DO-214A section 2.5.11.

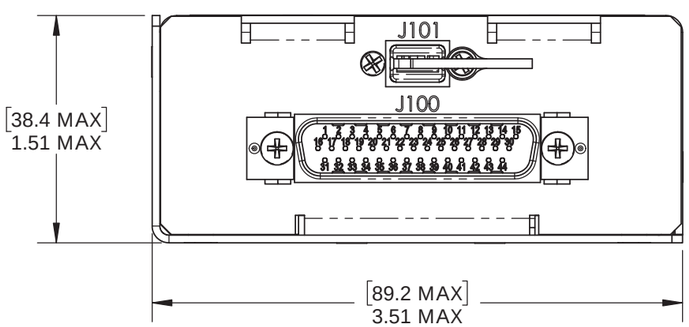
End of Environmental Qualification Form

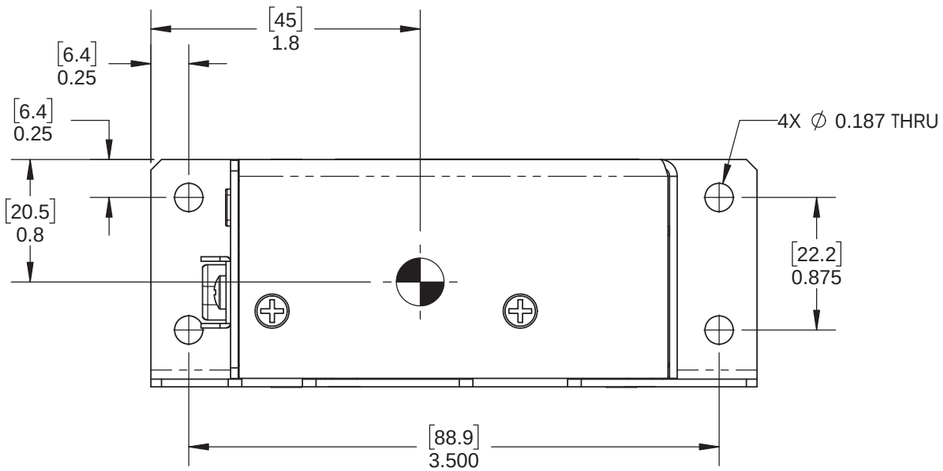




NOTES:

1. WEIGHT: 0.5 lb MAX.
2. ⊕ DENOTES CENTER OF GRAVITY EST.





	NAME	DATE
DRAWN	DMF/LAC	27-Mar-18
CHECKED	AEM N.A.	Mar 27 2018
APPROVED	AEM RB	Mar 27/18

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES [MM]
TOLERANCES:
ANGULAR ±0.5°
FRACTIONAL ±0.0625"
ONE DECIMAL PLACE ±0.100"
TWO DECIMAL PLACE ±0.030"
THREE DECIMAL PLACE ±0.010"

MATERIAL: N/A

FINISH: N/A
-

ANODYNE ELECTRONICS MANUFACTURING CORP.
15-1925 KIRSCHNER RD.
KELOWNA BC V1Y 4N7
(250)-763-1088
WWW.AEM-CORP.COM

TITLE:
AUDIO WARNING GENERATOR MECHANICAL INSTALLATION

PAPER SIZE:	CAGE CODE	PART No. :	REVISION
B	L9015	AWG08-001	1.00

SCALE: 1:1 | DO NOT SCALE DRAWING | DRAWING No. : 922-0 | SHEET: 1 OF 1

Section 3.0 Operation

3.1 Introduction

Information in this section consists of functional and operational procedures for the AWG08 Audio Warning Generator.

3.2 General

The AWG08 Audio Warning Generator has no operator accessible controls or indicators. During installation, it may be determined that level adjustments are required, reference Section 2.4.

3.3 System Interfaces

3.3.1 Inputs

The following are TSO input interfaces of the AWG08:

a) Direct audio input (DIR AUD IN) 1 is level adjustable and can be summed with direct audio input (DIR AUD IN) 2.

b) Direct audio input (DIR AUD IN) 2 is level adjustable and can be summed with direct audio input (DIR AUD IN) 1.

The following are Non-TSO input interfaces of the AWG08:

a) Eight independent priority warning trigger (WARN TRIG) inputs are user configurable for trigger type, warning type and cancel mode. The eight inputs correspond to the eight user configured audio warnings.

b) Warning audio test (WARN AUD TEST) input is user configurable for trigger type and tests all warning audio playback.

c) Warning trigger disable (WARN TRIG DISABLE) input is user configurable for trigger type and disables the warning trigger inputs.

d) Warning audio cancel (WARN AUD CANCEL) input is user configurable for trigger type and setting. The CANCEL input cancels warnings set to repeated playback.

e) SLAVE input is used to place the AWG08 in a slave state. The SLAVE input allows for cascaded priority across multiple AWG08 units.

f) External warning active (EXT WARN ACTIVE) input stops the AWG08 from starting new warning playback

g) Warning audio pause (WARN AUD PAUSE) input pauses any actively playing warning.

h) Emergency (EMERG) input places the AWG08 into emergency mode, which bypasses the internal warning generator, summing and amplification.

3.3.2 Outputs

The following are TSO output interfaces of the AWG08:

a) AUDIO OUTPUT 1 contains the configurable summed audio from direct audio input (DIR AUD IN) 1 and/or direct audio input (DIR AUD IN) 2 combined with warning audio.

b) AUDIO OUTPUT 2 contains the configurable summed audio from direct audio input (DIR AUD IN) 2 and/or direct audio input (DIR AUD IN) 1 combined with warning audio.

The following are Non-TSO output interfaces of the AWG08:

a) MASTER is an output intended to connect to the slave input of a second AWG08.

b) Warning active out (WARN ACTIVE OUT) is an output intended to switch the ground of an external relay and/or annunciator(s).

3.4 System Operations

3.4.1 Audio Summing

Direct audio input (DIR AUD IN) 1 and direct audio input (DIR AUD IN) 2 can be summed internally. The summing pathway is fully configurable (cross-point switch) between the audio inputs and outputs. See section 2.4.6

3.4.2 Audio Summing [Non-TSO]

All AWG08 audio outputs receive warning audio (except in emergency mode). Warning audio summing to the AWG08 audio outputs is not configurable.

3.4.3 Warning Audio and Setting Configuration [Non-TSO]

The AWG08 contains user configurable settings that require a USB connection and PC with a custom PC application. Default settings for these configurations are listed in section 1.0 of this document. All options available for configuration are detailed in the AWG-APS software application window. Visit www.aem-corp.com and contact AEM Sales or Support to download the latest version of the AWG-APS software.

The maximum warning file lengths per trigger are listed in section 1.3.2.

3.4.4 External Warning Active [Non-TSO]

The external warning active (EXT WARN ACTIVE) input suspends warning playback (after any currently playing warning completes playback). This input is only enabled if the MASTER/SLAVE user configurable option is enabled in AWG-APS software.

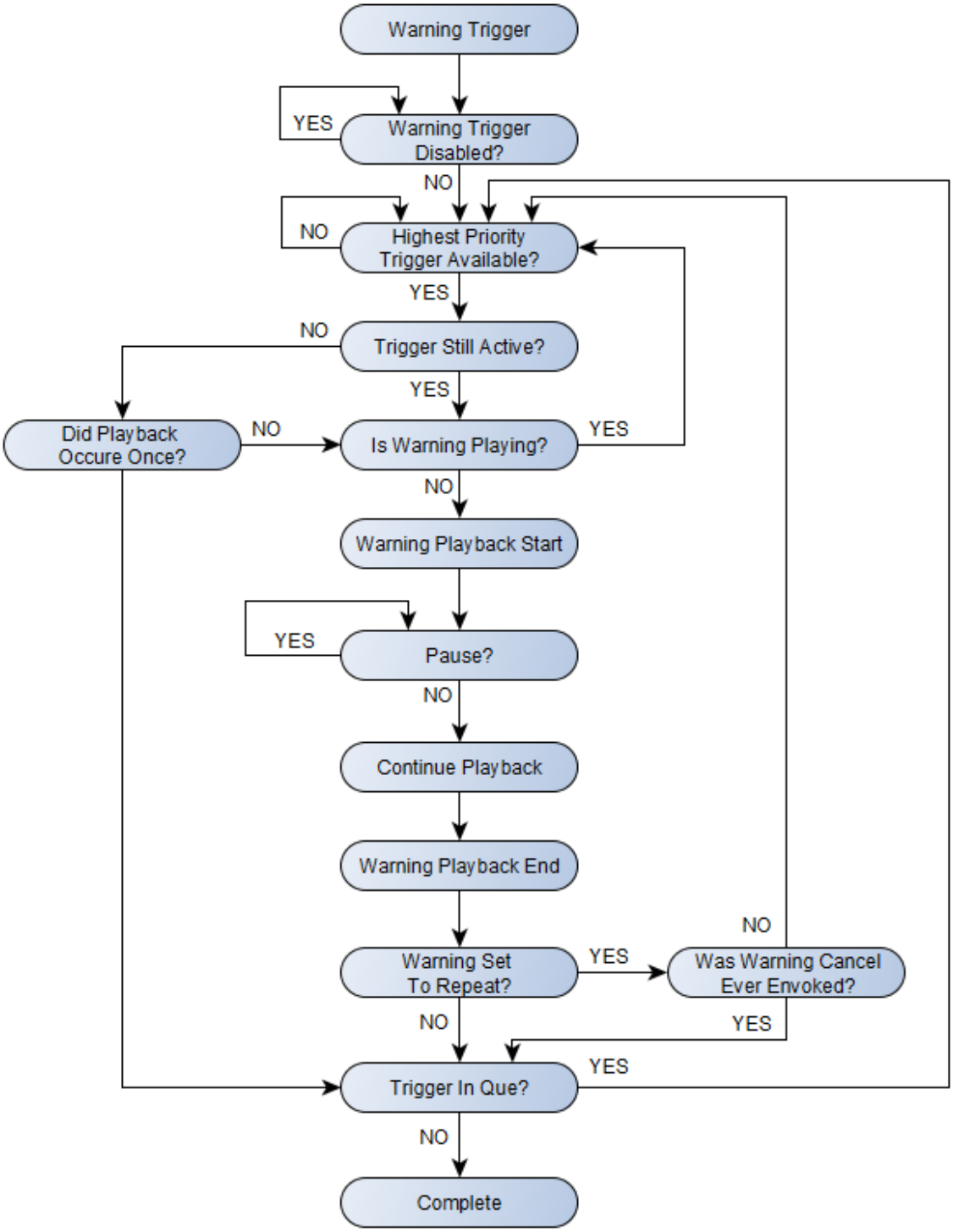
3.4.5 Trigger Priority [Non-TSO]

The AWG08 contains a fixed non-configurable priority. Refer to section 1.3.3 for trigger priority assignment.

3.4.6 Warning Playback [Non-TSO]

The flowchart below describes warning playback.

Figure 1. Warning Playback Flow Chart



3.4.7 Master/Slave [Non-TSO]

Multiple AWG08 units may be cascaded using their master and slave pins on connector J100. Cascading multiple AWG08 units allows for the continuation of the internal warning priority. Depending on the intended operation, connect both the slave and pause pins to the master output of the master unit in order to pause a lower priority slave unit ‘s message during playback. Master and slave configuration will require output audio level adjustments. The (SLAVE) input is only enabled if the MASTER/SLAVE user configurable option is enabled in AWG-APS software. For details on installation recommendations and additional limitations visit www.aem-corp.com and contact AEM Sales or Support.

Master Warning Trigger	Priority		Slave Warning Trigger	Priority
Master Warn Trig 1	1		Slave Warn Trig 1	9
Master Warn Trig 2	2		Slave Warn Trig 2	10
Master Warn Trig 3	3		Slave Warn Trig 3	11
Master Warn Trig 4	4		Slave Warn Trig 4	12
Master Warn Trig 5	5		Slave Warn Trig 5	13
Master Warn Trig 6	6		Slave Warn Trig 6	14
Master Warn Trig 7	7		Slave Warn Trig 7	15
Master Warn Trig 8	8		Slave Warn Trig 8	16

3.4.8 Emergency

The AWG08 contains an emergency mode which can be manually activated with an external switch connected to the emergency (EMERG) input or when the power supply drops below an internal threshold. Emergency mode is also activated if the user attempts to make setting changes to the AWG08 over USB while aircraft power is applied. Emergency mode connects the direct audio inputs (DIR AUD IN) to the audio outputs (AUDIO OUTPUT) and isolates the audio path from the internal warnings. Warnings cannot be heard in emergency mode.

3.4.9 Input Mute During Warning Playback [Non-TSO]

The AWG08 can be user configured to mute both direct audio inputs (DIR AUD IN) during warning playback. This setting cannot be enabled individually for each audio input.

3.4.10 Warning Audio Pause [Non-TSO]

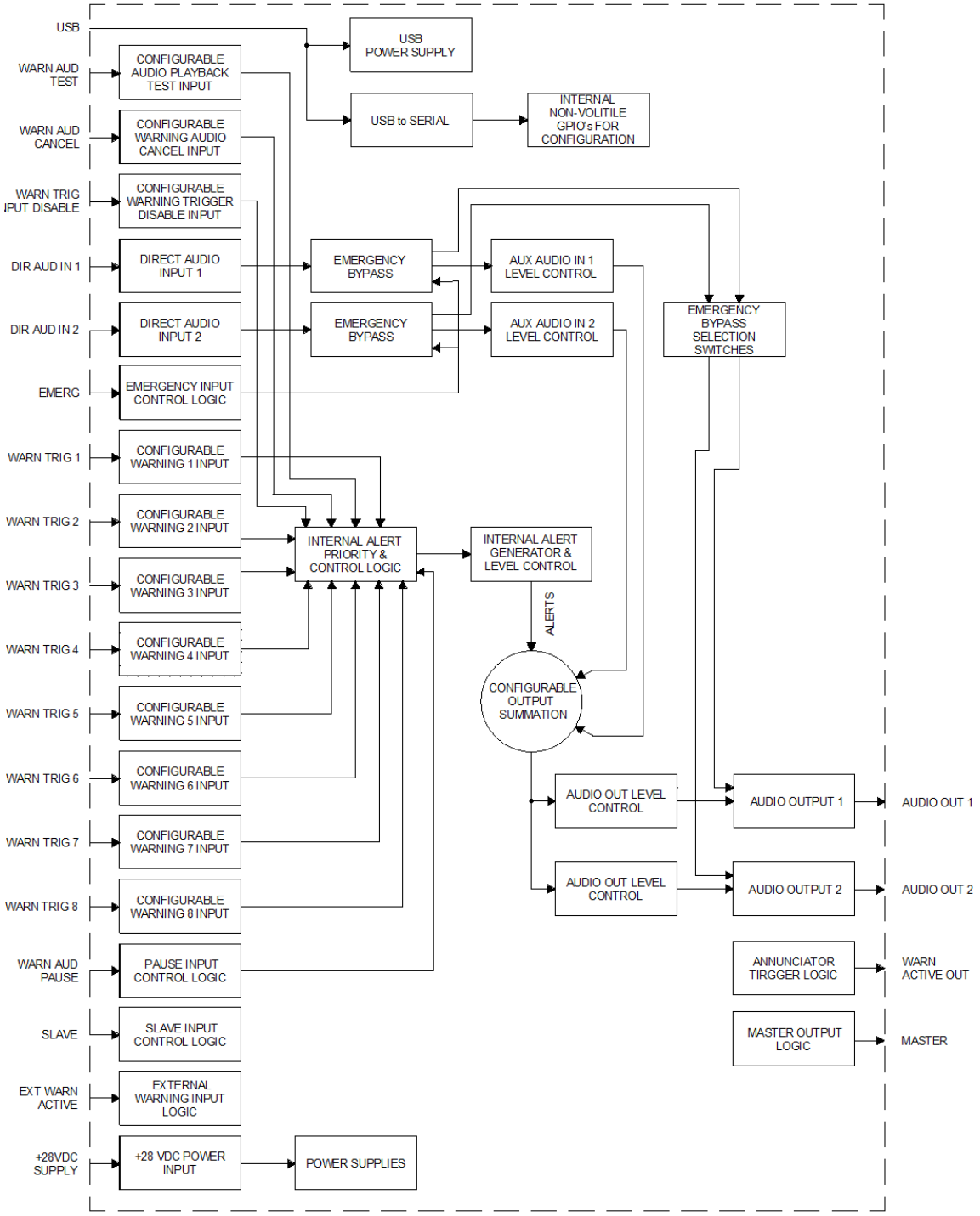
The AWG08 can pause warning playback by activating the warning audio pause (WARN AUD PAUSE) input. Warning audio pause (WARN AUD PAUSE) does not stop or cancel playback but simply suspends playback for the duration that warning audio pause is activated.

3.4.11 Warning Audio Cancel [Non-TSO]

The AWG08 can cancel repeated warning playback by activating the warning audio cancel (WARN AUD CANCEL) input. Warning audio cancel (WARN AUD CANCEL) cannot stop warning playback but simply stops the repetition of warnings. Warning audio cancel (WARN AUD CANCEL) is user configurable and can be enabled on a per warning basis. Momentarily activating warning audio cancel (WARN AUD CANCEL) will cancel warning playback for a single repeating warning. Holding warning audio cancel (WARN AUD CANCEL) active for an extended period will cancel multiple repeating warnings (each active warning will playback a minimum of 1 time).

3.4.12 Block Diagram

Figure 2. Block Diagram



End of Section 3.0