

World Leader of In-Rack, Audio, Video, Data Monitoring, and Closed Captioning Solutions

# **AVMFlex58W Series**

- AVMFlex58W-SA
- AVMFlex58W-LP2S

### 1RU Audio/Video Monitors

User Guide

Part Number 821702, Revision B



© 2009 Wohler Technologies, Inc. and PANORAMA. All rights reserved.

This publication is protected by federal copyright law. No part of this publication may be copied or distributed, stored in a retrieval system, or translated into any human or computer language in any form or by any means electronic, mechanical, manual, magnetic, or otherwise, or disclosed to third parties without the express written permission of Wohler Technologies.

#### Reproduction

Licensed users and authorized distributors of Wohler Technologies, Inc. products may copy this document for use with Wohler Technologies., Inc. products provided that the copyright notice above is included in all reproductions.

#### **Customer Support**

Wohler Technologies, Inc. 31055 Huntwood Avenue Hayward, CA 94544 www.wohler.com

Phone: 510-870-0810 FAX: 510-870-0811 US Toll Free: 1-888-596-4537 (1-888-5-WOHLER) Web: www.wohler.com Sales: sales@wohler.com Support: support@wohler.com

#### **Disclaimers**

Even though Wohler Technologies, Inc. has tested its equipment and software, and reviewed the documentation, Wohler Technologies, Inc makes no warranty or representation, either express or implied, with respect to software, documentation, their quality, performance, merchantability, or fitness for a particular purpose.

In no event will Wohler Technologies, Inc. be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect in the hardware, software, or its documentation, even if advised of the possibility of such damages.

Some states do not allow the exclusion or limitation for incidental or consequential damages, so the above exclusion or limitation may not apply to you.

#### **Printing**

This document is intended to be printed on a duplex printer, such that the copy appears on both sides of each page. This ensures that all new chapters start on a right-facing page.

This document looks best when printed on a color printer since some images may be indistinct when printed on a black and white printer.

#### Other Technologies and Products

Dolby is a registered trademark of Dolby Laboratories, Inc.

Microsoft Windows, and Internet Explorer are registered trademarks of Microsoft Corporation.

#### Last Update

October 28, 2009

# **AVMFlex58W Series** User Guide

# Introduction

### Overview

The AVMFlex58W Series includes two types of monitors:

- AVMFlex58W-LPS2 (Analog)
- AVMFlex58W-SA (Analog and SD-SDI)

Both units feature one 5.8" looped CVBS video monitor with flexible VPOD (video peripheral outboard display) gooseneck LCD system and 2-channels, audio monitoring and metering.

# **Topics**

Topics	Page
Introduction	1
Safety Instructions	2
Unpacking and Installation Recommendations	3
Features	4
Specifications	6
Front Panel	9
Rear Panel	12
Audio and Metering	18
Video and VPOD Features	22
Technical Functional Overview	22

# Safety Instructions

- 1. Read, keep, and follow all of these instructions; heed all warnings.
- 2. Do not use this equipment near water.
- 3. Use only a dry cloth to clean the equipment.
- 4. Do not block any ventilation openings. Install only in accordance with the instructions in the section entitled, "Unpacking and Installation Recommendations" on page 3.
- 5. Do not install near any heat source such as a radiator, heat register, amplifier, or stove.
- 6. Do not expose the equipment to rain or moisture.
- 7. Do not attempt to plug the unit into a two-blade outlet (with only two prongs of equal width).

#### **IMPORTANT**:

By design, these monitors will only plug into a three-prong outlet for your safety. If the plug does not fit into your outlet, contact an electrician to replace the obsolete outlet.

- 8. Protect the power cord from being walked on or pinched, particularly at plug's source on the equipment and at the socket.
- 9. Use only the attachments/accessories specified by the manufacturer.
- 10. Unplug the equipment during lightning storms or when unused for long periods of time.
- 11. Refer all servicing to qualified service personnel. Servicing will be required under all of the following conditions:
  - The equipment has been damaged in any way, such as when the power-supply cord or plug is damaged.
  - Liquid had been spilled or objects have fallen onto the equipment.
  - The equipment has been exposed to rain or moisture.
  - The equipment does not operate normally.
  - The equipment has been dropped.

# Unpacking and Installation Recommendations

# Unpacking

Unpack the AVMFlex58W Series unit from the shipping container and inspect all articles for shipping damage. If you find any damage, notify the shipping carrier immediately for claims adjustments. Compare the shipping box contents to the packing slip. Contact a PANORAMA sales representative if there are any unexplained shortages.

# Mounting

The unit is designed to install into a standard 19" rack mounted at eye level for best visual observation of the monitor screens. The AVMFlex58W Series unit rack mounts in a standard EIA-310-D specification 19"/483mm rack and needs 1RU of space. Allow sufficient space at the unit rear for connector and cable clearance (approximately 4''/102 mm). The AVMFlex58W Series unit rack mounts from the front panel support rails. Rear support is not required.

### Heat Dissipation

The ambient temperature inside the mounting enclosure should not exceed 40° Celsius (104° Fahrenheit). Adjacent devices can be rack mounted (or stacked) in proximity to the unit if the above temperature is not exceeded. Allow a 1RU (1.75"/44.45mm) space above and below the unit for air circulation.

#### **CAUTION!**

In products featuring an audio amplifier and speakers, the surface at the side of the unit, where the audio amplifier heat sink is internally attached, may get very hot after extended operation. When operating the unit exercise caution when touching this surface and ensure that external materials which may be adversely affected by heat are not in contact with it.

### Power

The unit comes with a standard 24VDC/3.0A internal power supply and connects an A/C mains power source (65W, 100 to 240 VAC, 50/ 60Hz) to the IEC connector provided on the rear panel of the unit.

### **Audio Connections**

Connection of the audio feeds is straightforward. Please refer to the system interconnect block diagram (Figure 1–13 on page 23) for clarification of the general signal paths into and out of the AVMFlex58W Series units.

### Cable Recommendations

Recommended cable type for analog video signals is: Belden 8281, Belden 1694A, or equivalent. Recommended cable type for analog audio signals is: Belden 9451 or equivalent.

# Sympathetic Vibration

Sympathetic vibration from other equipment (cables, etc.,) in the rack may be serious enough to interfere with the unit's sound quality out in the listening area. The use of thin card stock and/or felt or foam weather-stripping type materials between adjacent vibrating surfaces, or tying up loose cables, etc., may be required to stop vibrations external to the unit.

# **Features**

The AVMFlex58W Series of audio/video monitors provide the capability to monitor CVBS video on a LCD display with full-fidelity stereo audio monitoring in a single rack space (1U). The AVMFlex58W Series models feature a VPOD LCD video display module mounted to the front panel via a flexible gooseneck allowing for extensive control of the viewing angle.

All models in the AVMFlex58W Series contain four high performance speakers driven by three power amplifiers: two amplifier/driver combinations handle midrange and high frequency information in stereo, while the third center channel reproduces information below the 500 Hz crossover point. Output limiter circuits are incorporated to protect the speakers.

The VPOD LCD Video Display is 5.8" (16:9), LCD size and features controls for aspect ratio, color, tint/hue (NTSC only), and brightness.

The display also has a power LED of its own and a bi-color (red/green) tally indication LED.

All AVMFlex58W Series models come equipped with two 10-segment tri-color (red/amber/green) LED bar graph display level meters, separate volume and balance controls, a power indication LED, headphone output, and a unique LED display, which visually shows phase (polarity) relationships of the signals selected for monitoring. Extensive magnetic shielding allows placement immediately adjacent to video monitors with no color impurities.

The AVMFlex58W Series rear panels are each configured with two video and audio sources linked by a IN A/IN B switch on the VPOD video display module for simple A/V monitor switching.

The AVMFlex58W-LP2S has two CVBS analog video BNC inputs and two stereo analog audio XLR input pairs. The audio and video sources are linked so that the IN A/IN B switch selects between video A and audio **A** or video **B** and audio **B**. It also includes CVBS looped outputs.

The AVMFlex58W-SA has one CVBS analog video BNC input, one stereo analog audio XLR input pair, one SD-SDI video stream, and one of four de-embedded SDI audio pairs as the sources. The audio and video sources are linked to that the IN A/IN B switch selects between CVBS video and analog audio, or SDI video and SDI audio. CVBS video has a BNC loop output. The monitor also provides an analog output converted from the selected SDI pair.

Common features of the rack-mounted monitor:

- Bi-amp sum amplification through high/mid and woofer speakers
- DB-25 connector on rear panel provided for tally connections
- A selectable analog audio stereo input on a balanced 3-pin XLR connector
- Balanced analog output of selected audio source on two 3-pin XLR connectors
- Two 10-segment tri-color (green/amber/red) LED bar graph display audio level meters
- Phase indication LEDs for selected audio source
- 98 dB SPL at two feet

#### **AVMFlex58W Series User Guide**

#### **Specifications**

- Excellent high frequency response for positive detection of background whine and noise
- Thorough magnetic shielding for placement next to video monitors
- Separate volume and balance controls
- Headphone output

#### Common features of the VPOD module:

- Large LCD video display for a space-saving 1RU
- 5.8" (16:9) LCD video display with a 4:3 aspect ratio switch
- Flexible gooseneck mounting of video display allows adjustable viewing angle in all directions
- A/B switch for selection of one of two linked video and analog audio sources
- Adjustment for color, tint/hue (NTSC only), and brightness
- Dual color (red/green) tally indication LED \*Power indication LED
- NTSC/PAL format

# **Specifications**

Table 1–1 below lists the specifications for both models.

Table 1–1 Monitor Specifications (Both Models)

Specification	LP2S (Analog) Values	SA (Analog/SD-SDI) Values
Audio Inputs	2 Pair Line 3-Pin XLR-F	1 Pair Line 3-Pin XLR-F SDI Embedded
Audio Input Impedance	>40k Ω, balanced	Line >40k $\Omega$ , balanced SDI: 75 $\Omega$ , unbalanced

Table 1–1 Monitor Specifications (Both Models) (Continued)

Specification	LP2S (Analog) Values	SA (Analog/SD-SDI) Values
Audio Outputs	2 XLR-M balanced	Line Output of Selected: 2 XLR-M
	(selected source)	Line Output from SDI: 2 XLR-M
Peak Acoustic Output	98dB SPL medium @2 feet	
Frequency Response (1/6 Octave)	80 Hz to 20 Hz (± 5 dB) (-10 dB @ 50 Hz, 22 kHz)	
Power Output	RMS each side = 5W, 7W peak	
1 ower output		= 11W, 16W peak
Electrical Distortion		elow input threshold
Hum and Noise	Better than -68 dB	below full output
		CVBS (Composite Analog)
Video Input Format	1 V peak to peak	SDI video (with embedded audio) SMPTE 259M
VII. 1	2 CVBS BNC	1 CVBS BNC (B Input)
Video Input Connectors		1 SDI BNC (A Input)
Video Input Termination	CVBS: 75 $\Omega$ , selectable	CVBS: 75 $\Omega$ , selectable
		SDI: 75 <b>Ω</b>
	2 CVBS BNC (passive loop-through)	1 CVBS BNC
		(passive loop-through)
Video Output Connectors		1 SDI re-clocked output
		1 CVBS BNC
		(from SDI input)
Video Display Modes	NTSC	/PAL
Video Display Type	Active Matr	rix TFT-LCD
Video Picture Controls	Brightness, color, a	nd tint (NTSC only)
Video Color		
Configuration	RGB delta	
Magnetic Shielding	<1 gauss any adjacent surface	
Power Supply	Internal 100 to 240 VAC, 50-60 Hz	
Power Consumption	20 Watts typical, 30W Max   22 Watts typical, 32W Max	
Dimension (h x w x d) (chassis only)	1.75 x 19 x 10 inches 44.5x 483 x 254 mm	
Weight (chassis only)	9.5 lbs. (4.3 kg) w/ 6.8 VPOD	

Table 1–2 lists the information specific to the AVMFlex58W-SA.

Table 1–2 **AVMFlex-58W-SA Series SDI Specifications** 

Specification	Values
SDI Input Characteristics	75 $\Omega$ (BNC), AC coupled, 15 dB minimum return loss, 10 to 270 MHz
Receiver Type	Auto equalizing, re-clocked
Sensitivity Performance	Tolerates cable loss of at least 30 dB @ 135 MHz
Input Formats	Component, either 525 or 625 lines with 48 KHz audio
Audio Sampling Rate	48 KHz
SDI Output Type	Re-clocked copy of SDI input (equalized and scrambled NRZI)
SDI Output	400 to 700 ps
SDI Output Level	750 to 850 mV
Maximum of Analog Output	±24 dBv (0dBv=0.775 vRMS)
THD (Full Output)	<0.008%
D to A Gain Calibration, (dB=dBFS)	±8=-20, ±4=20, ±6=-9, 0=-18 (dip switch selectable)
	Red LED:
SDI Lock Indication	Off=Not Locked
	Red=Locked

Table 1–3 lists the specifications for the video monitor for both models.

**VPOD Video Specifications (Both Models)** Table 1–3

Specification	Values
Screen Size (diagonal inches)	5.8'
Active Area (H x V, mm)	127.2 x 71.84
LCD Aspect Ratio	16:9
Resolution (dots x lines)	1200 x 234
Dot Pitch (mm)	0.106 x 0.307
Contrast Ratio	350:1
Brightness (NITs)	350
Viewing Angle (top/bottom/left/right)	30/60/60/60
Weight (VPOD module w/mount)	1.25lbs.
Power Consumption (Watts, VPOD	7W
Height x Width x Depth	4.4 x 6.4 x 1.22"

Table 1–4 **Level Meter Specifications** 

Specification	Value	
Level Calibration	-6, 0, +4, +8 dBv, Selectable	
Frequency Response	20 Hz to 18 kHz (±0.5 dB)	
Level Meter Type	10-segment LED Bar graph Display	
LED Colors	Tricolor (red, amber, green)	
Metering Range	23 dB	
Bar graph Length	2.00" (50.8 mm)	
LED Segment Size	0.152" x 0.305" (3.56 x 7.75 mm)	
LED Segment Pitch	0.20" (5.08 mm)	
Segment Brightness	5.5 mcd (= 20 mA)	
Segment Brightness,	<8% difference between segments	
Uniformity		
Adjacent Segment "Off"	<1% of brightness of active segment	
Brightness		
Peak Emission Wavelength	green: 570 nm red: 630 nm	
Display Mode (Ballistics)	VU or PPM, Selectable	
VU Characteristics		
Rise Time	300 millisecond to 99% of full	
Kise Tille	indication	
Decay Time	300 millisecond	
PPM Characteristics		
Attack Time	10 milliseconds	
Decay Time	2 seconds, 0 to -20 dB	

Features and specifications subject to improvement without Note: notice.

# Front Panel

### Common Controls and Indicators

**Speakers**: The internal speaker system is comprised of two mid-range tweeter speakers (left and right) and two woofer speakers (left and right). The two mid-range speakers reproduce only the mid and high frequencies, while the two woofer speakers monaurally reproduce the low frequencies.

#### Front Panel

**Headphone Jack**: Select the headphone audio sources as you would for the internal speakers. When you plug in headphones, the speakers will mute. This jack accepts a standard 1/4" phone type stereo plug.

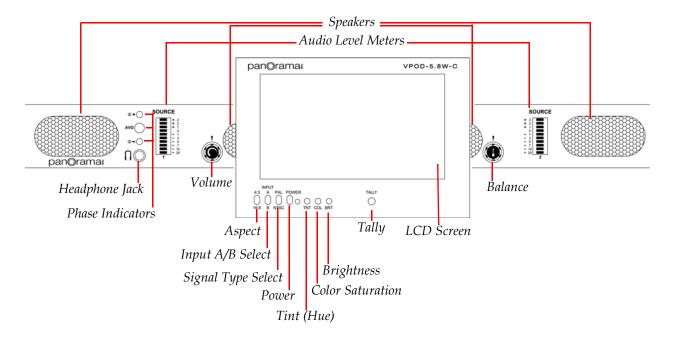
**Audio Level Meters**: Audio levels are visually displayed via these two 10-segment, tri-color (red, amber, green) LED bar graph display level meters. The left bar graph monitors Channel A while the right bar graph monitors Channel B. These meters are able to display signal levels using either PPM or VU standards as selected via a DIP switch module accessible by removing the top cover of the unit. See Level Meter Settings on page 20 for specifications and settings of these meters.

**Volume Control**: This controls the loudness of the audio reproduced by the internal speakers or connected headphone. Clockwise rotation of this control increases the loudness of the monitored audio in both Channels 1 and 2.

**Balance**: This knob adjusts the volume balance between the left and right speakers.

### AVMFlex58W-LP2-Specific Features

Figure 1–1 AVMFlex58W-LP2 Front Panel



**Front Panel** 

Phase Indication LEDs: These three LEDs offer instant visual verification of phase (polarity) conditions in the pair of channels selected for monitoring in the left/right channel speakers. The two smaller top and bottom LEDs, labeled  $\Phi$  + and  $\Phi$  -, show instantaneous phase relationships in the signal, while the larger middle LED, labeled **AVG**, indicates the average phase condition. The top  $\Phi$  + LED glows (or blinks) green when signals are in-phase. The bottom  $\Phi$  - LED glows (or blinks) amber for out-of-phase signals. The middle **AVG** LED indicates the average phase condition by glowing green for in-phase conditions, or red for out-of-phase conditions. In general, it is sufficient to regard the **AVG** LED (average phase condition) as adequate for proper phase monitoring. While it is normal for stereo signals to contain some intermittent instantaneous out-of-phase and in-phase conditions ( $\Phi$  + and  $\Phi$  - small LEDs), a steady red glow of the **AVG** LED almost always indicates an out-of-phase alarm condition.

### AVMFlex58W-SA-Specific Features

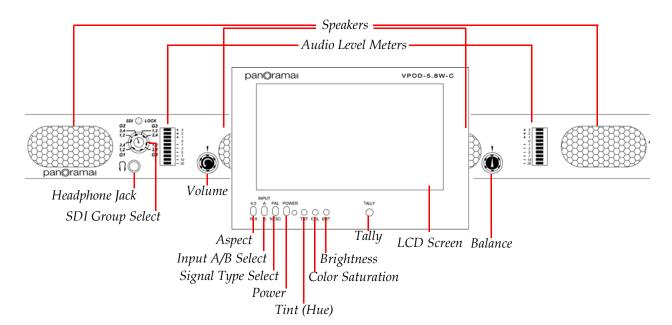


Figure 1-2 AVMFlex58W-SA Front Panel

**SDI Group Select Switch**: This eight-position rotary switch selects the SDI Group (G1, G2, G3, or G4) and SDI Subgroups (1, 2, 3, or 4) for the SDI source. Select the SDI source using the Input A/B on the front of the VPOD.

#### VPOD

Video signals entering the AVMFlex58W Series unit are monitored through the VPOD LCD video display. The VPOD module is attached to the front panel by a length of flexible gooseneck tubing allowing angle viewing adjustment in all directions.

**4:3/16:9 (Switch):** Selects the image aspect ratio displayed. The horizontal axis is narrow for 4:3 and full width for 16:9.

**Input A/B (Switch)**: Pressing the switch up selects input A; pressing it down selects input B.

**PAL/NTSC (Switch)**: Pressing the switch up selects the PAL signal type; pressing it down selects the NTSC input type.

**Power (Switch and Indicator)**: Pressing the switch up powers the video display monitor

**TNT (Rotary Knob)**: Adjusts the video display hue (for NTSC only).

**COL** (**Rotary Knob**): Adjusts the video display color saturation.

BRT (Rotary Knob): Adjusts the video display brightness.

**Tally (Indicator)**: This tri-color tally LED glows red, green, or amber, to indicate tally status associated with the video signal displayed.

# Rear Panel

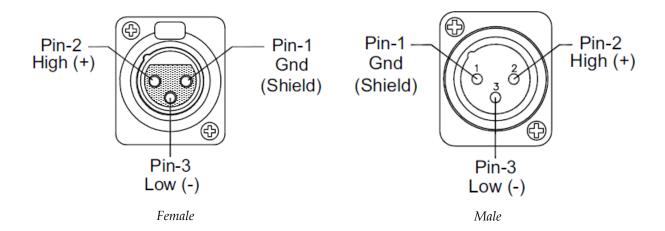
The rear panel connector configuration for the AVMFlex58W-LP2S and for the AVMFlex58W-SA are shown in Figures 1–4 on page 13 and 1–5 on page 14 respectively.

### Common Connectors

**Power Connector**: Attach the supplied standard IEC-320 power cord between this connector and mains power (100 - 250VAC, 50/60 Hz). The front panel Power LED (Item 5, page 10) will glow green to indicate operating voltages are present.

**Balanced Audio Out**: These two male 3-pin XLR connectors are analog outputs of the source as selected for the left and right speakers. See the diagram below for pin out information for these connectors.

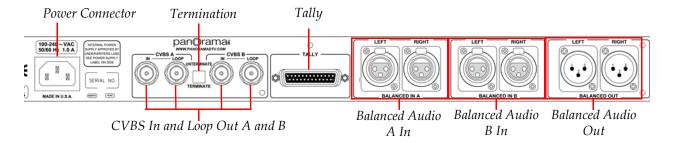
Figure 1–3 **XLR Pin Outs** 



Tally (DB-25): This 25-pin sub-miniature connector allows you to control the tally light on the front of the VPOD. For more information about this connector and how it functions, refer to Tally Control on page 15.

### AVMFlex58W-LP2S Rear Panel

Figure 1-4 **AVMFlex58W-LP2S Rear Panel** 



**Termination:** Each switch in this two-section DIP module is used to set the termination characteristics for the CVBS input connector next to it. If a CVBS loop connector is connected to downstream equipment, set the appropriate switch to the up position (Unterminate). If no downstream equipment is connected, then set to the down position (Terminate).

#### **AVMFlex58W Series User Guide**

#### Rear Panel

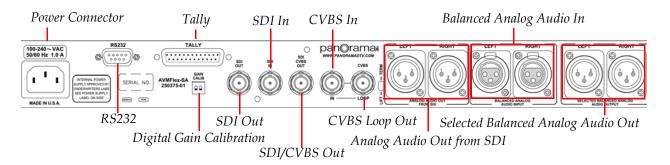
**CVBS In A and B**: Each of these two female BNC connectors (CVBS A, IN and CVBS B, IN) accept standard CVBS (Composite Analog) video signals and are configured for 75  $\Omega$  impedance connections. Note that video input selection is linked to the audio input selection.

CVBS Loop Out A and B: Each of the two loop output connectors (CVBS A and CVBS B) provide passive signal-through connections from the associated CVBS IN connector to down-stream equipment. Note that these outputs function even if power to the AVMFlex58W unit is turned off.

**Balanced Audio In A and B**: These female XLR connectors accept standard analog audio signals and are configured for  $40K\ \Omega$  impedance connections. Left and Right inputs are provided in each of the two input sections (Balanced In A and Balanced In B). Note that audio input selection is linked to the video input selection.

### AVMFlex58W-SA Rear Panel

Figure 1–5 AVMFlex58W-SA Rear Panel



**RS233 (DB-9)**: This connector is used for uploading software upgrades into the 910935 audio/video demux board.

**Digital Gain Calibration (Dip Switch)**: You can set the SDI input gain calibration (the analog level that corresponds to a given digital input value) using this two-position dip switch. The factory setting is +4 dB (analog) = -20 dBFS (digital). See Figure 1–1 on page 10 for details.

**SDI Input (BNC-F)**: The SDI input receives standard audio/video embedded SDI signals and can be configured for an unbalanced 75  $\Omega$  connection. Use the **SDI Group Select** switch (SA only) and subgroups to monitor. To monitor this input, you must set the **Input A/B** switch to **A**.

**SDI Output (BNC-F)**: The SDI output connector outputs a reclocked (regenerated) copy of the of the signal entering the SDI input connector and is configured for an unbalanced 75  $\Omega$  connection. This output functions regardless of other selection settings so that the reclocked output can remain independent of the unit's other monitoring functions (as long as a valid SDI source is present on the SDI input).

SDI/CVBS Out (BNC-F): CVBS video signal converted from SD-SDI video. Active as long as SDI video is present.

**CVBS In**: Much like CVBS In B on LP2S model.

# Tally Control

The VPOD LCD display module provides a dual-color tally indication LED accessed by the tally control connector located on the chassis rear panel. The tally indicator LED is capable of displaying three colors: red, green, and amber. Illuminating the red or green LED separately will result in that tally color. Illuminating the red and green LEDs simultaneously creates the amber color. For tally control connector pin out functions, see Table 1–5 on page 17 below.

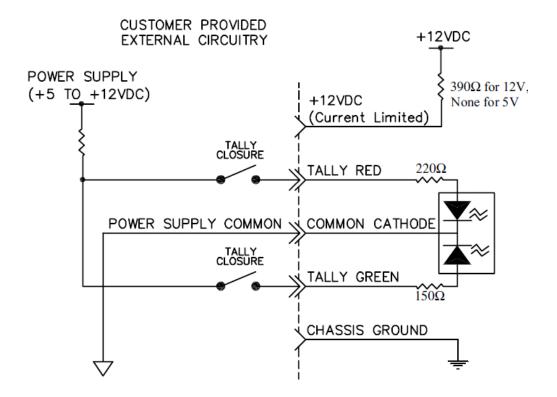
Two examples of tally connection configurations are shown in Figure-3b, below. You can operate the Tally Indication LED by numerous methods. The two tutorial examples showing isolated and non-isolated activation are illustrated to show basic operation. Although switches are employed in these examples, the LEDs interface with TTL levels. You can design illumination circuits as shown, by using TTL buffers, or by using transistors as switches.

#### Isolated

Operating the Tally Indication LED in an isolated configuration requires an external (customer provided) power supply and tally system. If your facility currently has a tally system with companion power source, use this method to integrate the AVMFlex58W Series tally with your existing tally matrix.

Note: Ensure the LED power supply provides +5 to +12VDC.

Figure 1-6 **Isolated (External Power) Tally Closure** Circuit



#### Non-Isolated

Operating the Tally Indication LED in the non-isolated configuration uses the AVMFlex58W Series internal power supply to provide the tally LED voltage. Connect your tally closures to the respective AVMFlex58W tally connections.

Figure 1-7 **DB25 Pin Female Sub-Miniature D Connector Pin Out** 

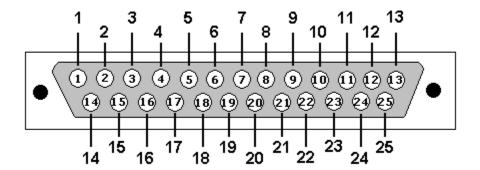
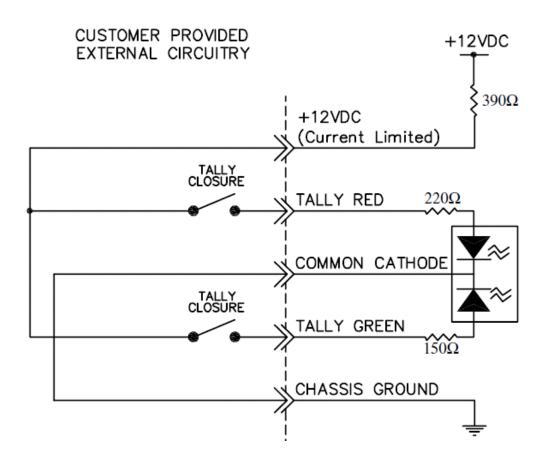


Table 1–5 AVMFlex58W Series Tally Connector Pin Functions

Pin	Function
1	+12VDC (Current Limited)
2	Red Anode
3	Green Anode
4	N/C
5	N/C
6	N/C
7	N/C
8	N/C
9	N/C
10	N/C
11	N/C
12	N/C
13	N/C
14	Chassis Ground
15	R/G Common Cathode
16	Chassis Ground
17	Chassis Ground
18	N/C
19	Chassis Ground
20	Chassis Ground
21	N/C
22	Chassis Ground
23	Chassis Ground
24	N/C
25	Chassis Ground

Figure 1–8 Non-Isolated (Internal Power) Tally Closure Circuit



# **Audio and Metering**

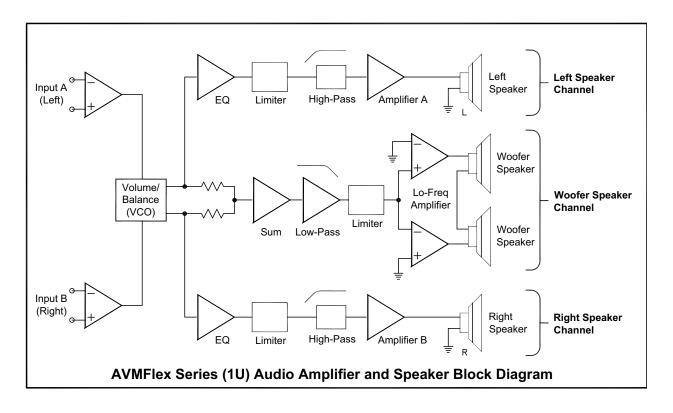
Both AVMFlex58W Series models contain high performance loudspeakers transducers driven by three power amplifiers; two amplifier/driver combinations handle midrange and high frequency information in the left and right (stereo) speaker channels, while the third amplifier channel sums the left and right channel information below the 500 Hz crossover point in the woofer (bass) speaker(s). Note that the woofer channel is not a dedicated LFE or center channel.

# Speaker Configuration

The 1U rack size AVMFlex58W Series products are configured with two speakers (left and right) to reproduce mid- and high-range audio frequencies (in stereo), but feature two woofer speakers to reproduce the summed (combined) low-range audio frequencies from the left and right speaker input channels. It should be noted that both woofer speakers, which are wired in series, are driven from one woofer speaker channel, and are not stereo.

See the simplified diagram below for a block diagram of the AVMFlex58W Series audio amplifier/speaker configuration.

Figure 1–9 AVMFlex58W Series Audio Amplifier And Speaker Block Diagram



### **Balance Control Characteristics**

The balance control attenuates the signal from the source, so that the left and right bass frequencies (summed together and reproduced in the woofer channel) will also respond to the balance control.

#### **Example:**

The following example demonstrates how the inputs are routed and the frequencies of the speakers.

If an audio signal of a voice speaking English is fed to the **A** (left) input and a voice speaking Spanish is fed to the **B** (right) input, then the left

#### **AVMFlex58W Series User Guide**

#### **Audio and Metering**

speaker channel will reproduce the mid-range and high-range frequencies of the English speaking voice, the right speaker channel will reproduce the mid-range and high-range frequencies of the Spanish speaking voice, and the woofer speaker channel will reproduce the summed (combined) low-range frequencies of both voices.

If the balance control is panned to the left, then the Spanish speaking voice in the right speaker channel will diminish in volume, the Spanish speaking voice in the woofer speaker channel will also diminish, and the English speaking voice in both the right speaker channel and woofer speaker channel will increase slightly (to maintain overall output level). The converse is true if the balance control is panned to the right. See Figure 1–9 on page 19 for placement of the balance control in the audio amplifier circuit.

# Level Meter Settings

#### **Level Meter DIP Switch Location**

Two DIP switch modules allow the user to set the level meter parameters independently for each of the two bar graph displays. These DIP switches are accessible by removing the top cover of the unit and are located on two PCBs installed at right angles to the front panel where the level meters are installed. The DIP switches face upwards for easy adjustment.

There are four sections (1, 2, 3, 4) on each DIP switch module. The first two sections (1 and 2) are for setting the meter input gain calibration and the second two sections (3 and 4) are for setting the bar graph display mode.

### **Meter Input Gain Calibration Settings**

DIP switch sections 1 and 2 set the meter input gain calibration, which determines the level of the input signal that will result in a zero reading on the meter bar graph's. The factory setting is +4 dBu, but can instead be set for -6 dBu, 0 dBu, or +8 dBu by the user. See Figure 1–10 on page 21 for settings.

Figure 1–10 **Analog Gain Calibration Settings** 

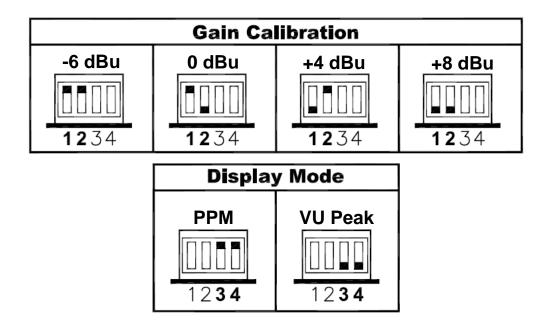
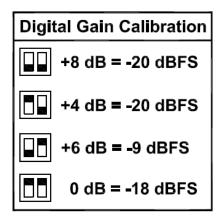


Figure 1–11 **Digital Gain Calibration Settings (SA)** 



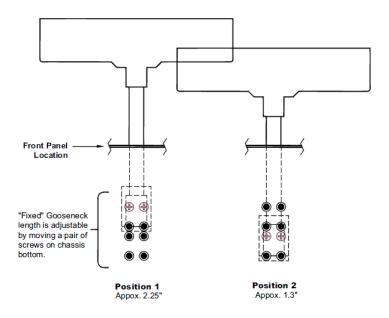
### **Bar Graph Display Modes**

DIP switch sections 3 and 4 determine how peak levels are displayed (display mode) and select either the PPM mode or an auto-reset VU peak mode (not the PPM value). The PPM mode exhibits an attack time of 10 milliseconds and a decay time of 2 seconds from 0 to -20 dB. The VU mode exhibits a 300 millisecond rise to 99% of full indication and a decay of 300 milliseconds. The factory setting is VU mode. See the diagram below for settings.

# Video and VPOD Features

The VPOD LCD display module may be adjusted for two lengths (1.3" and 2.25") by changing the location of two screws on the bottom of the chassis which are lined up with the VPOD module. See Figure 1–12 below.

Figure 1–12 **VPOD Gooseneck Adjustment** 



- 1. Locate the adjustment holes on the bottom of the main chassis that correspond with the VPOD module.
- 2. Remove the two (2) installed screws and set aside for later use.
- 3. Carefully pull or push the VPOD module until the two holes of the internal gooseneck mount line up with the appropriate two holes in the chassis bottom. Ensure that the LCD display screen is not touched or otherwise damaged during this operation.
- 4. Reinstall the two screws removed in step 2 into the new position.

Caution:

Do not rotate (twist) the VPOD module around the gooseneck axis; the torque may damage the gooseneck and/or internal wiring. Also, avoid touching the LCD video screen itself with the fingers or other objects.

# Technical Functional Overview

Figure 1–13 on page 23 illustrates the AVMFlex 58W functionality.

Figure 1–13 AVMFlex58W Series Block Diagram

