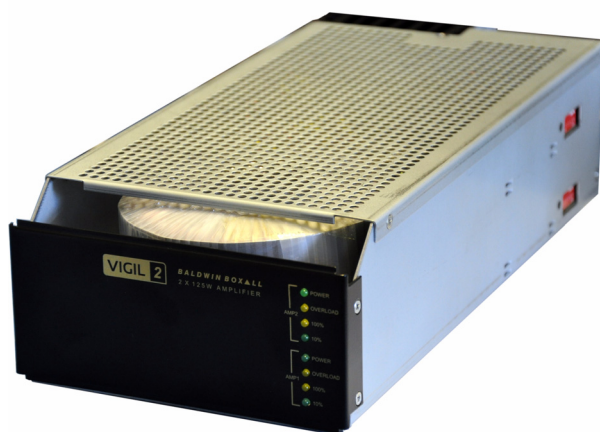


BALDWIN BOX▲LL

BV125D Amplifier

Installation Instructions

Firmware version: N/A



Manual name: BV125D Installation Manual

Issue: I

ECR: DPI90

Date of issue: Oct 2010

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This equipment has been designed and manufactured to conform to the following EC Standards:

EMC: EN55103-1 Environment Classification: E1,

EMC: EN55103-2 Environment Classification: E5,

Safety: EN60065

Failure to use the equipment in the manner described in the product literature will invalidate the conformity.

A "Declaration of Conformity" statement to the above standards and a list of auxiliary equipment used for compliance verification is available on request.

Amendment Record _____	v
Proprietary Notice _____	v
Safety Information _____	vi
Comments _____	vi

Introduction

BV125D Amplifier Description _____	1
BV125D Amplifier Specifications _____	2

Installation Examples

Example 1: Two Separate Amplifiers _____	4
Example 2: A-B Dual Circuit _____	4

Basic Fault Finding

“Power” LED not illuminated _____	5
“Overload” LED Illuminated _____	6
Abnormal Load Condition - - - - -	6
Over Temperature Condition- - - - -	6
Disassembly Procedures _____	6

Maintenance

Maintenance Requirements of BS5839-8 _____	7
BV125D Amplifier Routine Maintenance _____	7

AMENDMENT RECORD

Page Number(s) Affected	Change Note Number	Nature of Amendment	Date of Amendment
All	DPI90	Issue 1: First release	Oct 2010

PROPRIETARY NOTICE

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SAFETY INFORMATION


Personnel who install, maintain or repair this equipment must read the safety information below before starting work.

Voltages in excess of 30 Volts RMS or 50 Volts DC are considered Hazardous and in certain circumstances can be lethal.


If Functional Testing, Maintenance, or Repair is to be completed with the Mains Power (and/or battery backup) connected then this should only be undertaken by personnel who are fully aware of the danger involved and who have taken adequate precautions and training.


This Manual contains Warnings, Cautions and Notes.

Warnings describe potential threats to health or life, e.g.

	<p>WARNING</p> <p>Before attempting to remove this component, ensure the Mains Power Supply and Battery Backup have been disconnected.</p>
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Cautions describe potential threats to the equipment, e.g.

	<p>CAUTION</p> <p>Notice must be taken of all cautions. If a Caution is ignored the equipment may be damaged.</p>
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	<p>CAUTION: ELECTRO-STATIC SENSITIVE DEVICES</p> <p>Observe the relevant precautions for the protection of Electro-static Sensitive Devices when handling this equipment.</p>
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Notes are statements that are useful to the user in the context of a particular section of the manual, e.g.



NOTE: Do not speak into the microphone until the "Speak Now" LED is illuminated.

COMMENTS

Comments regarding the content of this manual are welcome and should be addressed to mail@baldwinboxall.co.uk.

I Introduction

I.1 BV125D AMPLIFIER DESCRIPTION

The BV125D Amplifier module contains two independent Class “D” Power amplifiers, each with a single 500mV Balanced Line audio input and 125 Watt 100V Line output.

The front panel status indicators show “Power”, “Overload” and Output Level (10% and 100% output level) for both amplifiers.

The audio inputs to each amplifier are presented on separate RJ45 connectors.

The outputs are presented on two 3-way plug/cage clamp termination connectors providing 50V or 100V output.

The 24V DC inputs are presented on two 2-way crimp connected sockets.

The power output stages of the amplifiers are protected against overload conditions (i.e. short circuits or abnormal loads).

Should an amplifier be subjected to an abnormal load the input to the relevant power amplifier is attenuated to a safe level and the “Overload” LED will be illuminated. The amplifier output voltages are also sensed and should they exceed 100V the relevant input signal will be attenuated ensuring safe operation without creating unnecessary distortion.

Over temperature protection is provided using sensors attached to the output stage heat sink. Should the temperature exceed 90 Degrees Celsius the input signal to the relevant amplifier will be attenuated to a safe level and the “Overload” LED will be illuminated.

If the system is under surveillance it will cause the surveillance detector to indicate a fault condition due to the gain reduction.

1.2 BV125D AMPLIFIER SPECIFICATIONS

Parameter	Value (Per Amplifier)
Rated output power less than 0.2% THD	125W @ 80Ω
Typical output power less than 1% THD	160W @ 62.5Ω
Output regulation 120W @ 80Ω	Better than 2dB
Output Voltages obtainable	50V & 100V
Frequency response 120W @ 80Ω (-3dB)	35Hz - 20kHz
Input sensitivity and impedance	500mV @ 40KΩ
Input common mode rejection ratio (50Hz - 20kHz)	Better than 40dB, typically 60dB
Output noise reference to rated output	Better than 85dB
Cross talk between amplifiers @ 1kHz	Better than 70dB
Supply Voltage	22V - 35V DC
Supply Current: Sleep mode @ 26V (Battery supply)	50mA
Supply Current: Quiescent @ 30V (Mains supply)	160mA
Supply Current: Rated output power 125W @ 80Ω	5A
Supply DC Fuse (Automotive Style Blade)	10A
Output Stage Protection: Thermal	Output stage above 90°C
Output Stage Protection: Load	Excessive Output Stage Current
Output Stage Protection: Action	Reduces input to a safe level
Front Panel Indicators	
Power (Green)	DC Supply Connected
Overload (Yellow)	Protection circuit operating
100% (Yellow)	100V Output Voltage
10% (Green)	10V Output Voltage
Terminations	
Loudspeaker 100V Line Output	3 way cage clamp
Balanced Line Inputs	RJ45 connectors
DC Supply Input	2 pin crimp connectors

2 Installation Examples

The BV125D Amplifier has been designed for quick and simple connection and configuration.

The unit can either be used as two independent Amplifier Modules or two amplifiers wired as an A-B Dual Circuit using a single input signal.

Both amplifiers have two input connectors to enable simple interconnection using standard RJ45 patch leads.



NOTE: A six way DIL switch is located on the side panel.

The switch does not need to be changed from factory default settings when the unit is used as two independent amplifiers or as two amplifiers in A-B Dual Circuit.

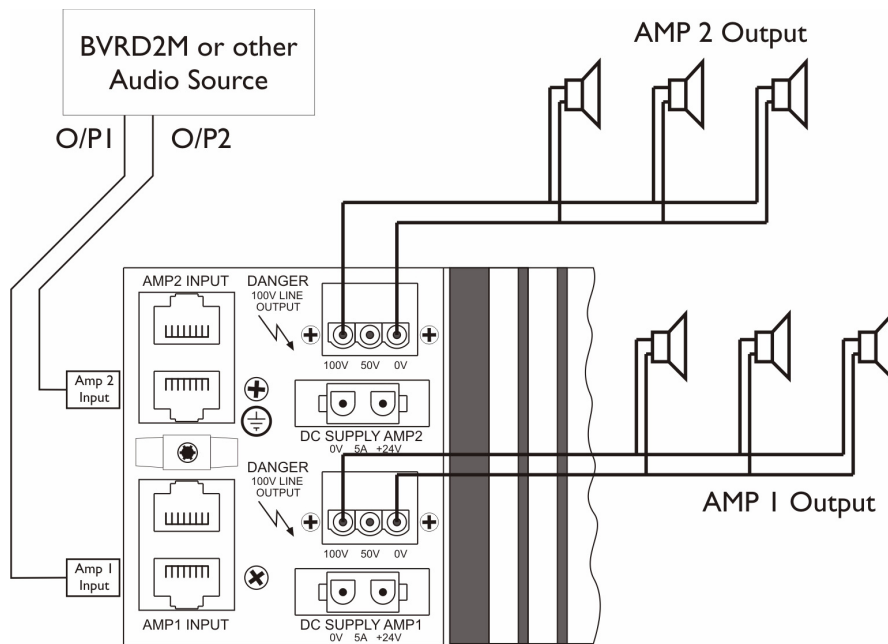
Default settings SW1.1 & SW1.2 "OFF", SW1.3 - 1.6 "ON".

The 100V Line output connectors are “cage clamp” type as this type of connector is more reliable than screw terminals.

The DC connectors are polarised two way latching crimp connectors.

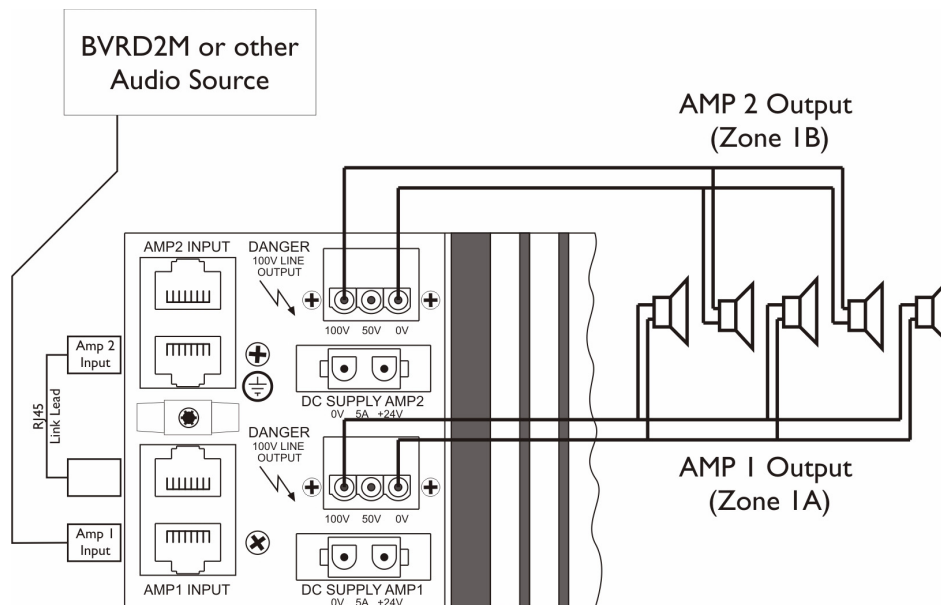
2.1 EXAMPLE 1: TWO SEPARATE AMPLIFIERS

Figure 2.1 — Each Amplifier has Separate Input & Output Signals



2.2 EXAMPLE 2: A-B DUAL CIRCUIT

Figure 2.2 — Identical Input Signal with Interleaved Outputs



NOTE: The RJ45 Amp Input sockets are connected in parallel unless the DIL Switches are changed from Default Settings.
Default settings SW1.1 & SW1.2 "OFF" (Up), SW1.3 - 1.6 "ON" (Down).

3 Basic Fault Finding

The BV125D Amplifier front panel provides indicators to show the current status of the unit. The following sections provide basic Fault Finding information should these indicators show a fault condition.

3.1 “POWER” LED NOT ILLUMINATED

The Supply LED should be permanently illuminated to show the 24V DC supply is present.

Each amplifier unit within the BV125D Amplifier is protected by an internal 10A automotive style blade fuse.



CAUTION

To prevent damage to the unit only replace a blown fuse with the correct rating and type. Before replacing a blown fuse ensure the power supply has been disconnected from the unit.

If the internal fuse blows when power is applied then it has suffered an internal fault and should be replaced with a serviceable unit. The faulty unit should be returned to Baldwin Boxall for repair.

If the fuse has not blown but the “Supply” LED is not illuminated then the relevant BVSMP Power Supply should be checked.

3.2 “OVERLOAD” LED ILLUMINATED

3.2.1 Abnormal Load Condition

The output stage is protected against overload conditions (e.g. short circuits or abnormal loads) by sensing the current and voltage and using these to control an input attenuator.

Should the amplifier be subjected to an abnormal load the input to the power amplifier is attenuated to a safe level using the VCA.

The amplifier output voltage is also sensed and should it exceed 100V the VCA will be activated and will reduce the input signal ensuring safe operation without creating unnecessary distortion.

If the system is under surveillance it will cause the surveillance detector to indicate a fault condition due to the gain reduction.

3.2.2 Over Temperature Condition

Over temperature protection is provided using a sensor attached to the output stage heatsink.

Should the temperature exceed 90°C the input signal to the power amplifier is attenuated to a safe level using a Voltage Controlled Attenuator and the front panel indicator is illuminated.

If the system is under surveillance it will cause the surveillance detector to indicate a fault condition due to the gain reduction.

3.3 DISASSEMBLY PROCEDURES

There are no Disassembly Procedures for this unit.



WARNING

The BV125D Amplifier output stages contain Hot Parts, High Voltages, and operate at High Frequencies.

Do not attempt to disassemble these units or operate them without the covers in place.

4 Maintenance

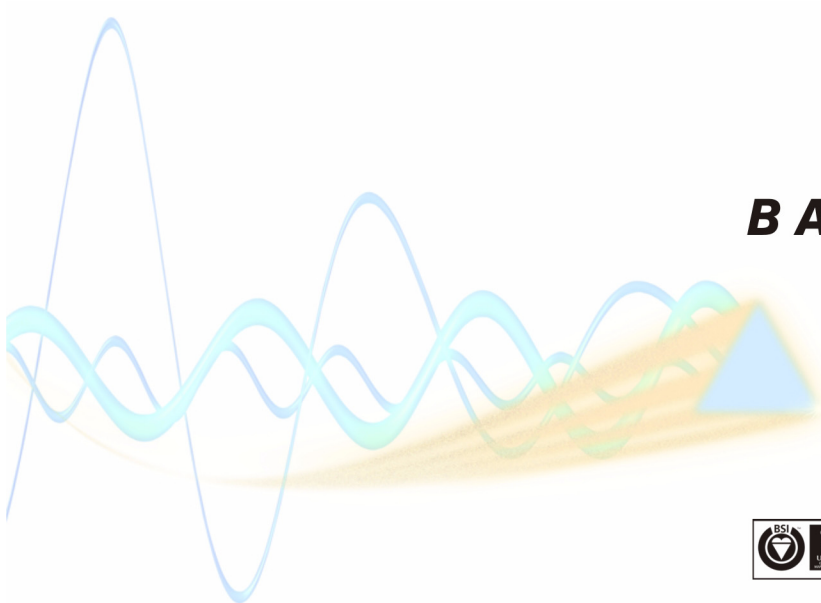
4.1 MAINTENANCE REQUIREMENTS OF BS5839-8

When the BV125D Amplifier is installed in a Voice Alarm System then the system must be maintained according to the requirements of BS5839-8.

4.2 BV125D AMPLIFIER ROUTINE MAINTENANCE

The BV125D Amplifier amplifier module requires a minimum of routine maintenance.

If the unit is operated in a particularly dusty environment, it may be necessary to occasionally remove accumulated dust from the external heatsink using a vacuum cleaner or similar.



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