



Vigil 3 Amplifiers

Installation Instructions



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This equipment has been designed and manufactured to conform to both CE & UKCA requirements

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

A “Declaration of Conformity” statement and a “Declaration of Performance” is available on request.

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

Introduction

Vigil 3 Amplifiers Description _____	1
Vigil 3 Amplifiers Specifications _____	3

Installation Example

Connections for A-B Dual Circuit _____	6
--	---

Basic Fault Finding

“OK / Fault” LED flashing or not illuminated _____	7
Disassembly Procedures _____	9

Maintenance

Maintenance Requirements of BS5839-8 _____	11
Vigil 3 Amplifiers Routine Maintenance _____	11

AMENDMENT RECORD

Change Note Number	Nature of Amendment	Date of Amendment
DP347	Initial release: Issue 1	Dec 2016
ECR4948	Remove parallel amplifier outputs	Feb 2023

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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 hello@baldwinboxall.co.uk.

I Introduction

I.1 VIGIL 3 AMPLIFIERS DESCRIPTION

The Vigil 3 Amplifiers range consists of modules containing 2 or 4 amplifier blocks.

The following Vigil 3 amplifier modules are available;

- BV75D - 2 x 75W Amplifier Blocks
- BV150D - 2 x 150W Amplifier Blocks
- BV300D - 2 x 300W Amplifier Blocks
- BV75Q - 4 x 75W Amplifier Blocks
- BV150Q - 4 x 150W Amplifier Blocks

Vigil 3 Amplifiers contain a built in mains PSU and when combined with a BVMBC Battery Charger Module form a complete EN54-4 compliant Battery Backed power supply system.

The audio input for each amplifier is presented on two separate RJ45 connectors.

Each amplifiers output is presented on a single 2-way plug/cage clamp termination connectors providing 100V output.

The Amplifier Module Mains Input is presented on a standard IEC connection and the 24V DC input (battery connection) is presented on a two 2-way plug/cage clamp termination.

In addition there is a single RJ45 AUX Output for connection to the BVMBC battery charger module.

The power output stage of the amplifier is 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. 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 module heat sink. Should the temperature exceed 70C an Over Temperature fault is indicated and if it exceeds 75C the input signal to the relevant amplifier will be attenuated to a safe level.

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

Each amplifier block has status LED's on the front panel consisting of an OK/FAULT LED and a 10%/100% LED.

The OK/FAULT LED indicates the following;

- Steady Green - OK
- Flashing Green - PSU Fault, no 24V or mains present
- Yellow - Overload or Over Temperature Fault

The 10%/100% LED indicates the following;

- Off - No signal output
- Green - 10V signal output
- Yellow - 100V signal output

1.2 VIGIL 3 AMPLIFIERS SPECIFICATIONS

Table 1.1 — Vigil 3 Amplifier Specifications

AMPLIFIERS	BV300D 2 x 300W	BV150D 2 x 150W	BV150Q 4 x 150W	BV75D 2 x 75W	BV75Q 4 x 75W
1KHz rated O/P power, <0.2% THD	300W @ 33.3 Ohms	150W @ 66.6 Ohms		75W @ 132 Ohms	
Output regulation	Better than 0.5dB	Better than 0.3dB		Better than 0.2dB	
Output voltage obtainable	100V only				
Frequency response (-3dB)	35Hz to 20kHz				
Input sensitivity and impedance	0dBm @ 10K Ohms Balanced				
Input common mode rejection ratio	(50Hz-20kHz) better than 40dB (typically 60dB)				
O/P noise reference to rated O/P	Better than 85dB(A)	Better than 80dB(A)			
Cross talk between amps at 1kHz	Better than 70dB				
Supply voltage (batteries)	22-28V DC				
Standby current (batteries)	50mA per amplifier				
Rated output power	14A / Amp	7.5A / Amp		3.75A / Amp	
Output stage protection Thermal Load Action	Output stage above 90°C Excessive output stage current Reduces input to safe level using low distortion VCA				
Fuse Protection					
AC supply (5 x 20mm)	2 x 2A(T)	1 x 2A(T)	2 x 2A(T)	1 x 2A(T)	2 x 2A(T)
Battery (automotive blade)	2 x 20A	1 x 20A	2 x 20A	1 x 20A	2 x 20A
Terminations					
Speaker Line O/P	2 x cage clamp		4 x 2 cage clamp	2 x cage clamp	4 x 2 cage clamp
Balanced line inputs	RJ45 connections				
DC supply (batteries)	2 pin rising clamp				
Mains supply input	IEC 6A filtered connector				
Dimensions	142 mm W x 75 mm H x 311 mm D				
Weight	3.1 kg	2.3kg	3.1kg	2.3kg	3.1kg
Mains Supply	230 V +10%/-15% 50/60Hz				
Standby Power Consumption (Mains)	16W	8W	16W	8W	16W
AUX DC O/P @ 30V	5A	2.5A	5A	2.5A	5A
Max Power Consumption	700W	350W	700W	175W	350W

2 Installation Example

The Vigil 3 Amplifiers have been designed for quick and simple connection and configuration.

The individual amplifier blocks can either be used as independent amplifiers or can be one of two amplifiers wired as an A-B Dual Circuit using a single input signal.



NOTE: Where possible when A-B circuits are used it is recommended that A and B circuits are connected to amplifiers in separate modules. This is due to power supplies, mains connections and battery connections being shared by amplifiers inside a module.



NOTE: Where possible when reserve amplifiers are used it is recommended that reserve amplifiers should be located in a different amplifier module to the primary amplifier. This is due to power supplies, mains connections and battery connections being shared by amplifiers inside a module.

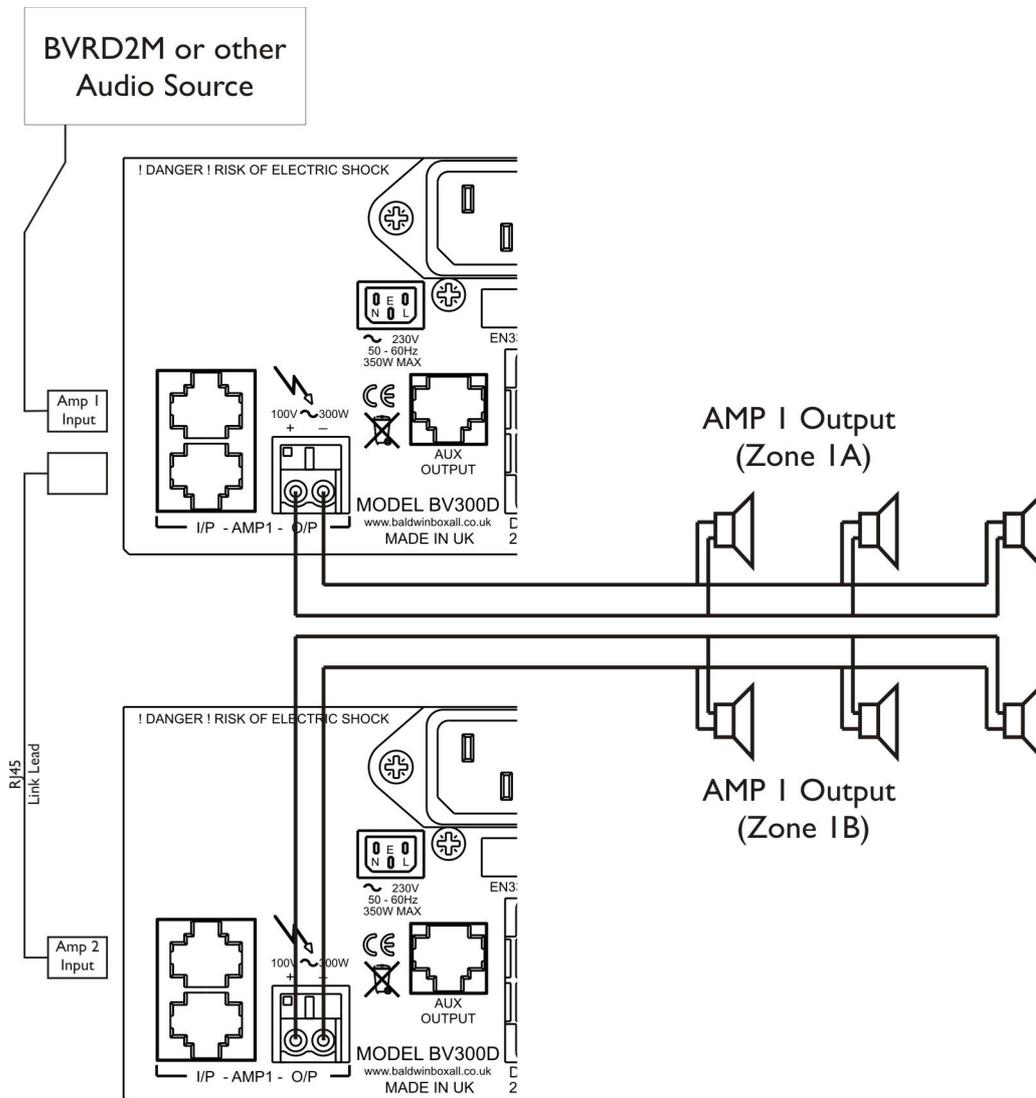
The amplifier blocks have two paralleled input connectors to enable simple interconnection using standard RJ45 patch leads.

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

In order to use the Vigil 3 amplifiers with a BVMBC battery charger module the AUX output connection of up to 5 amplifier modules must be connected to the BVMBC. For more information please see the BVMBC installation manual.

2.1 CONNECTIONS FOR A-B DUAL CIRCUIT

Figure 2.1 — Both Amplifiers use the same Input Signal



NOTE: For an EN54 compliant system there must be a loudspeaker line monitoring system included (such as the BVRDACO / BEL1 system).

3 Basic Fault Finding

The Vigil 3 Amplifiers front panels provide 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 “OK / FAULT” LED FLASHING OR NOT ILLUMINATED

The OK/FAULT LED should be permanently illuminated green to show the mains and 24V DC supplies are present.

Should the OK/FAULT not be permanently illuminated green please refer to Table 3.1 for fault finding information.

Table 3.1 — Fault Finding

OK/FAULT LED Status	Fault	Check
Off	No Power Present (24V or Mains)	Battery Connection Battery Voltage Battery Fuses Mains Connection Mains Fuses / Circuit Breakers
Flashing	24V or Mains Supply Failed	Remove 24V supply if LED extinguishes then fault is with mains supply. Check mains supply as above. Remove Mains Supply if LED extinguishes then fault is with 24V supply. Check battery connections as above. If both Mains Supply and 24V supply are present at the amplifier module then it has failed and must be returned for service.
Yellow	Overload or Overtemperature Fault	Disconnect speaker lines, if LED returns to Green then either the speaker lines are overloaded or shorted Disconnect speaker lines, if LED remains yellow then an overtemperature fault has occurred. Allow amplifier module to cool and check cooling fans.

3.2 DISASSEMBLY PROCEDURES

There are no Disassembly Procedures for this unit.



WARNING

The Vigil 3 Amplifiers 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.



CAUTION

There are no user replaceable fuses inside the Vigil 3 amplifiers. Failed units should be returned to Baldwin Boxall for repair or replacement.

4 Maintenance

4.1 MAINTENANCE REQUIREMENTS OF BS5839-8

When a Vigil 3 Amplifiers is installed in a Voice Alarm System then the system must be maintained according to the requirements of BS5839-8.

4.2 VIGIL 3 AMPLIFIERS ROUTINE MAINTENANCE

The Vigil 3 Amplifiers 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.

