

## **BV333**

# Operating Instructions

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**BALDWIN BOXALL**  
COMMUNICATIONS

## **VIGIL BV333**

The BV333 amplifier is a 333 Watt integrated amplifier combining the facilities of the BVPS power supply/charger with a high power quality amplifier. The BV333 Module is equipped with two 0dBm balanced line inputs incorporating a priority switching system. The priority is selected using a 2 way dual in line switch. Switch 1 when selected 'on' provides input 2 muting when 1 is accessed. Switch 2 when selected 'off' enables the first input irrespective of access conditions. When both switches are selected 'on' input 1 will override input 2. Therefore it is possible to have both inputs mixing together or cascade priority depending on the requirements.

LED indicators on the front panel show clearly which input or inputs are busy and the channel gain may be individually set using the front panel control. The output stage is protected against overload conditions i.e. short circuits etc. by means of sensing the current and voltage and presenting this DC signal to a voltage controlled 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 amplifiers output voltage is also sensed and should it exceed 100V the VCA will be activated and again will reduce the input signal ensuring safe operation without creating unnecessary distortion.

Over temperature protection is provided using a sensor attached to the output stage heatsink and should the temperature exceed 90° Celsius the VCA attenuates the input signal to a safe level and illuminates a warning LED. If the system is under surveillance it will cause the surveillance detector (IMP18) to indicate a fault condition due to the gain reduction. The inputs to the amplifier are presented on two separate four way plug in terminal connectors, each connector provides a balanced audio input, ground and access DC control input. The output is presented on a 3 way plug/screw termination connector providing 50V or 100V output. The necessary interface connections which enables up to 3 amplifiers to be paralleled are presented on a 6 way crimp connected plug and socket. An internal 2 way DIL switch enables the disconnection of the internal driver stage when this paralleled facility is required.

The front panel LED indicators include an output level status indicator consisting of 3 LEDs indicating 5V, 50V, and 100V maximum output level. A supply healthy indicator is also provided together with overload, over temperature and input busy indicators.

In the event of mains failure the DC is maintained using an external standby battery which is continuously float charged by the charger section of the PSU unit. A fused output is provided to power a mixer or auxiliary circuits. This output together with a fault volt free changeover contact are provided by a 9 way crimp connector plug and socket. The charger section is totally monitored and indicators for AC supply healthy, any DC fuse ruptured, charger fail, battery voltage high, and battery voltage low are incorporated.

Should any of the above fault conditions occur an internal relay releases providing a changeover contact, signalling to the fire detection panel. The charger incorporated is of the constant voltage type set for the recommended float charge. Should the battery be below this float charge, it will charge in a constant current mode at the rate of 3 amps and progressively reduce once the battery has achieved its nominal float level. Several chargers may be paralleled when used for larger systems and must be synchronised.

### BV333 – Amplifier Specification

<i>Rated Output Power Less than 0.2% THD</i>	Note 1:	300W 33.33 Ohms
<i>Typical Output Power Less than 1% THD</i>	Note 1:	360W 28.0 Ohms
<i>Output Regulation 300W 33.3 Ohms</i>	Note 1:	Better than 1.2 dB
<i>Output Voltages Obtainable</i>		50 & 100V
<i>Frequency Response 300W 33.3 Ohms</i>		35Hz - 20KHz
<i>Input Sensitivity and Impedance</i>		0.5V 40K Ohms Balanced
<i>Input Common Mode Rejection Ratio 50Hz-30KHz</i>		Better than 40dB typically 60dB
<i>Output Noise Reference Rated Output</i>		Better than 85dB
<i>Output Stage Protection:</i>		
Thermal		Heatsinks above 90 °C
Load Line		Output Stage Current & Voltage
Action		Reduces input to a safe level using a low distortion voltage controlled attenuator.
<i>DC Output to power BVMX Mixer/Aux</i>		30V @ 2A
<i>AC Supply Input Voltage</i>		230V 50-60Hz
<i>Maximum Power Consumption</i>		700VA
<i>Battery Supply Current</i>	Standby @ 26V	160mA
	Rated Output Power	22A

### BV333 - Battery Charger Specification

<i>Output Voltage @ 20-25 °C</i>	27.1V to suit 12 cells lead acid
<i>Output Voltage battery temperature compensation</i>	48mV/Per °C
<i>Maximum Charge Current</i>	3 A
<i>Battery Low Fault Voltage</i>	20V
<i>Battery High Fault Voltage</i>	29V
<i>Volt Free Fault Relay Output Contacts</i>	100V @ 1A Max

#### Fuse Protection

1 x AC Supply 5 x 20mm	6.3A(T)
2 x DC (Amplifier) Automotive Blade Type	15A
2 x Battery (Amplifier) Automotive Blade Type	15A
2 x DC (Charger) Automotive Blade Type	5A
1 x DC (Mixer / Aux) Automotive Blade Type	5A

Front Panel Indicators

*Power Supply:* AC Supply 'ON'  
OK i.e. No Fault  
Fuse Fault  
Charger Fault  
Battery Voltage High Fault  
Battery Voltage Low Fault

*Amplifier:* DC Supply  
High Temperature Alert (Heatsinks above 90° C)  
Overload (Protection Circuit Operating)  
Maximum Output (100V Output Voltage)  
50% Output (50V Output Voltage)  
5% Output (5V Output Voltage)  
Input 1 Accessed  
Input 2 Accessed  
Lamp Test Switch for above indications

Terminations

<i>AC Supply Input</i>	IEC 6A Filtered 3 pin Connector
<i>24V Battery Input</i>	3 pin Screw Terminated Connector
<i>Aux DC Output &amp; Fault Relay Contacts</i>	9 Pin Crimp Terminated Connector
<i>Loudspeaker Line Output</i>	3 Pin Screw Terminated Connector
<i>Balanced Line Input</i>	4 Pin Screw Terminated Connector
<i>Parallel Output Port</i>	6 Pin Crimp Terminated Connector

NOTE 1 240V AC SUPPLY, 100V LINE OUTPUT AT 1KHz.

Dimensions

Depth (front to rear)	320mm (12 1/2")
Width (rack mounted)	482.6mm (19")
Width (free standing)	455 (18")
Height	88mm (3 1/2") 2 unit
Weight	14Kg

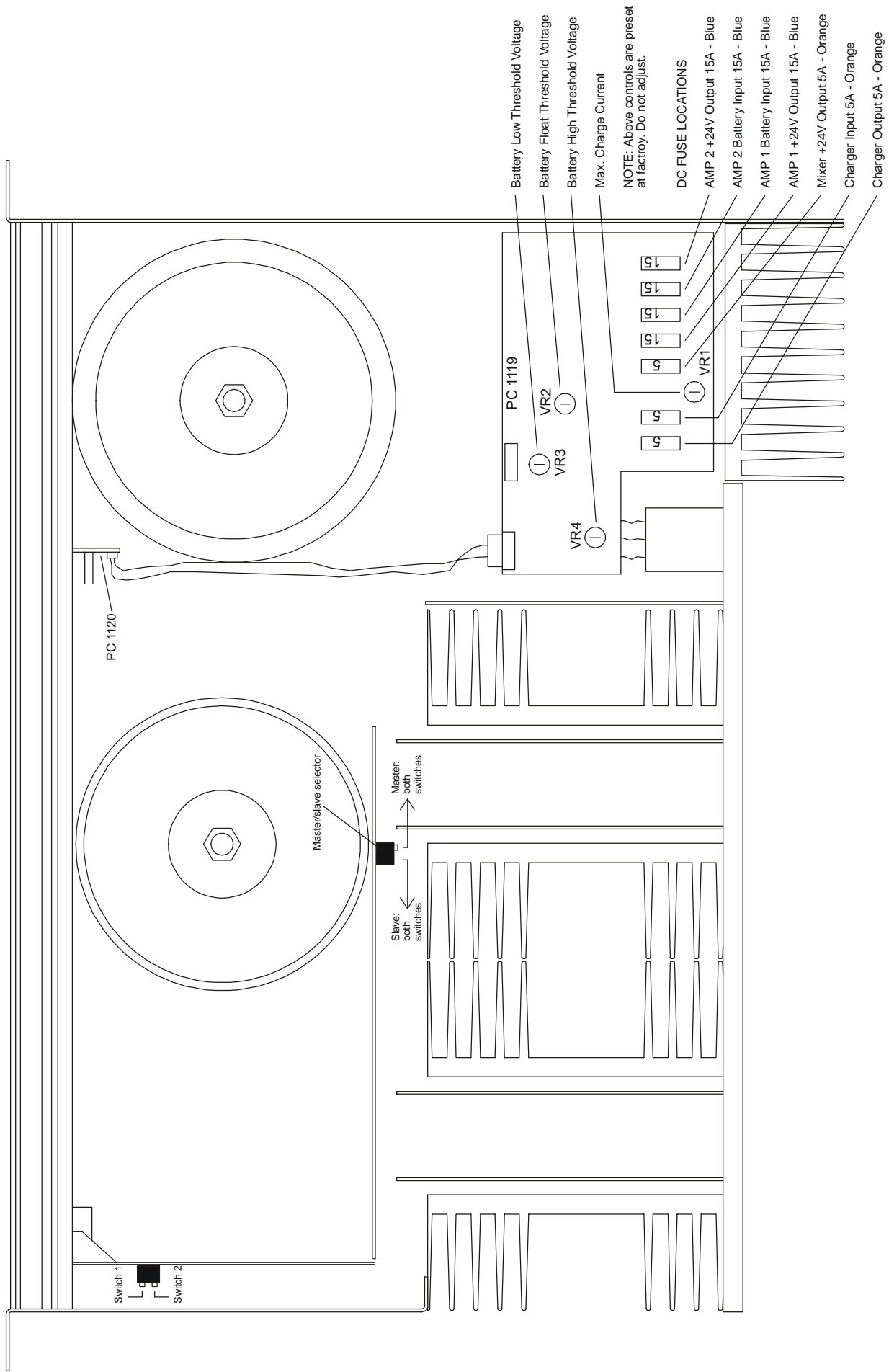


Figure 1 - BV333 Plan View

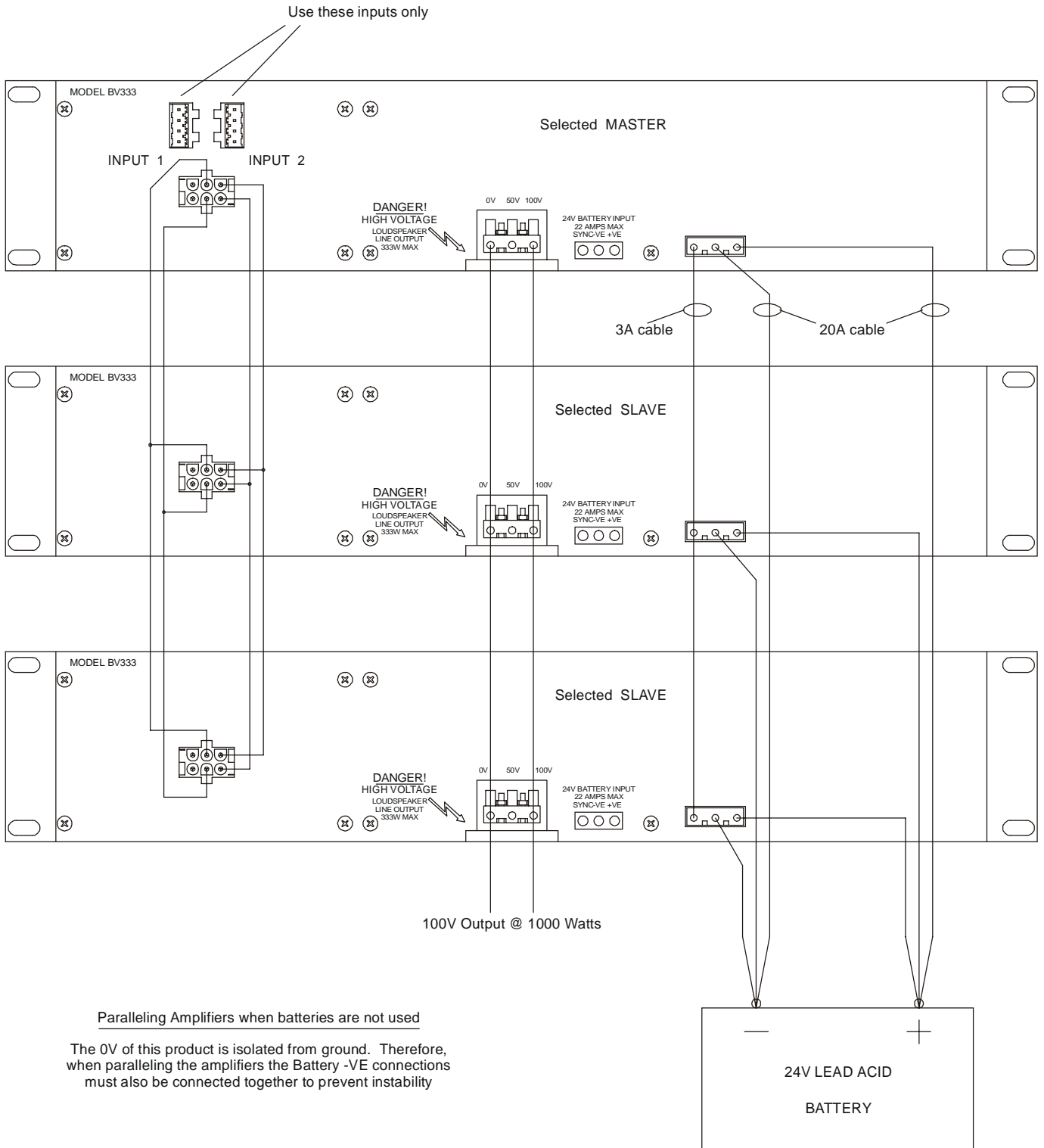


Figure 2 - Paralleling three Bv333 units for 1000w output

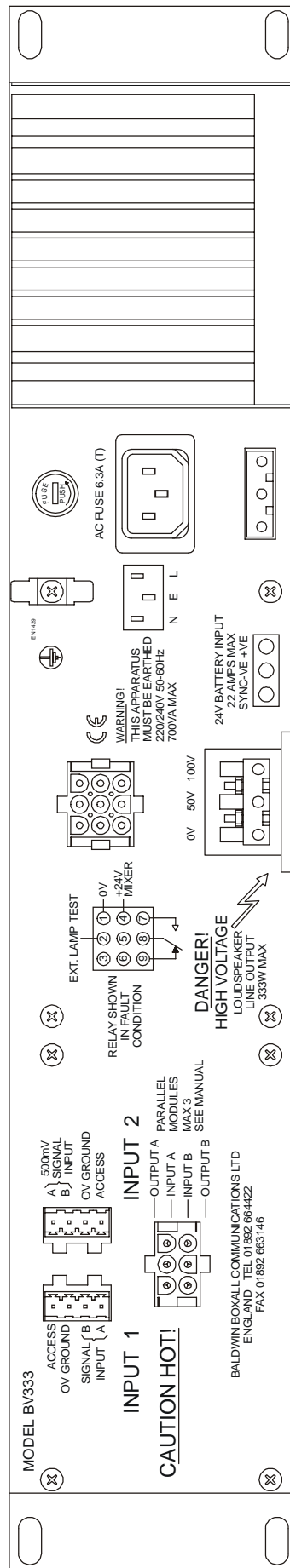
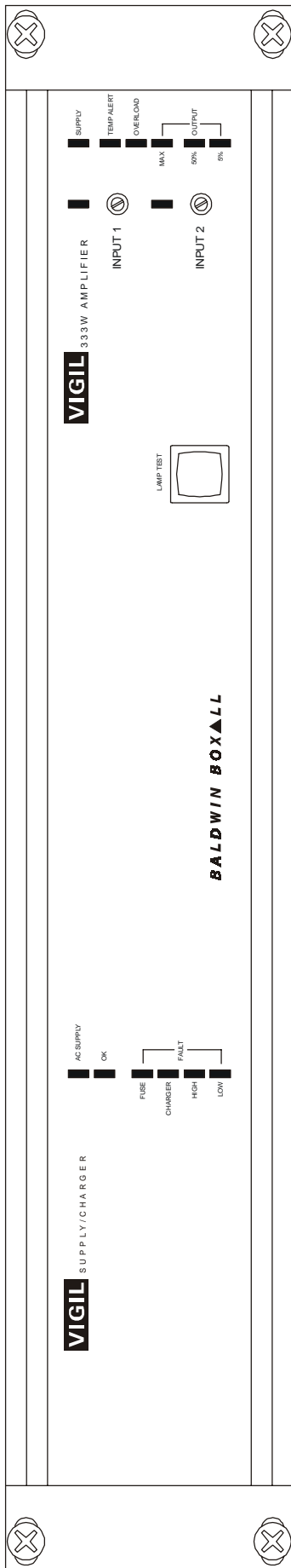
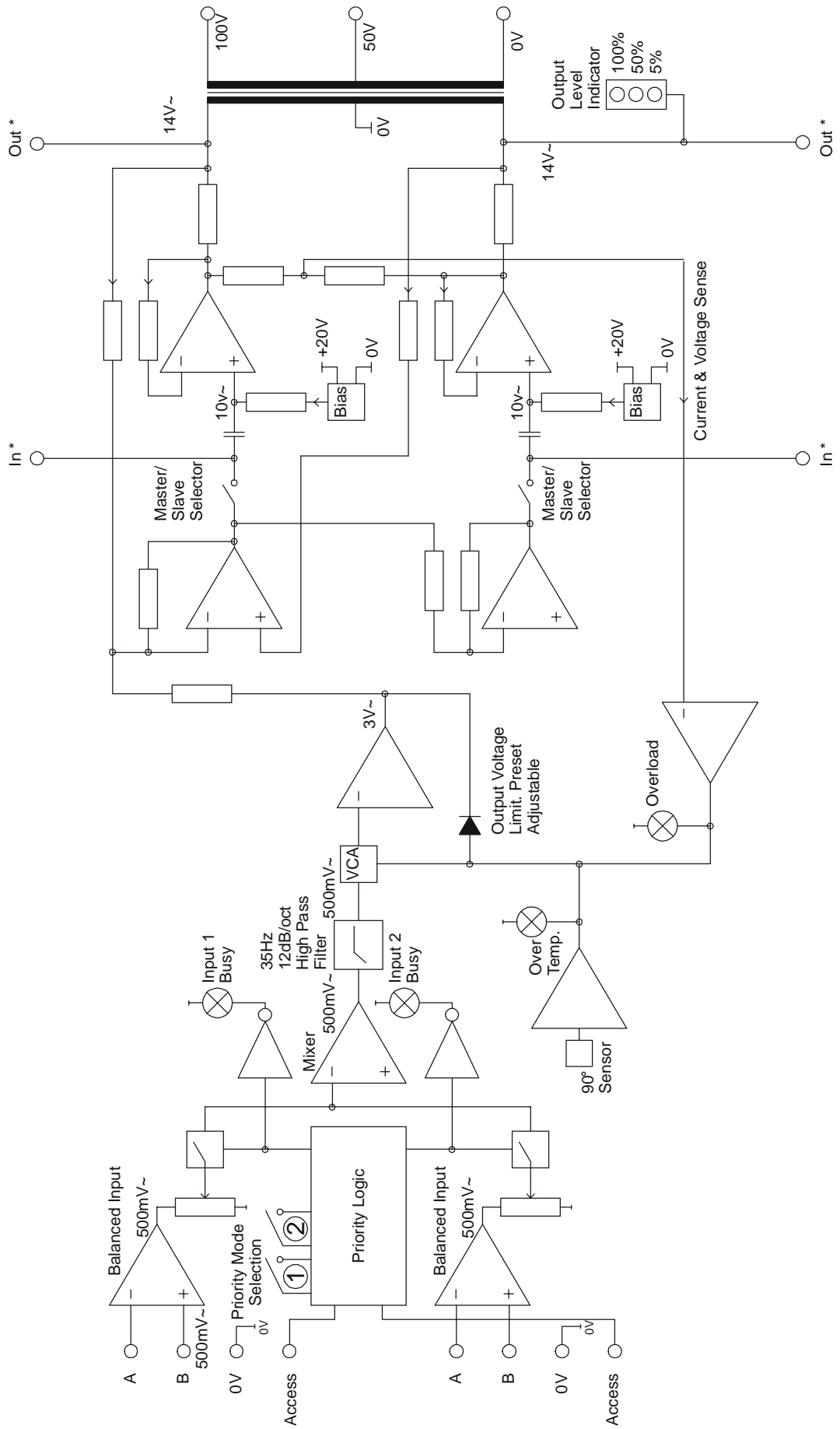


Figure 3 - Bv333 Front and Rear Panels



\* To parallel output stage

Figure 4 - Bv333 Block Diagram