Models V250, V150, V100, V60 and V35

Power Vector Series Modular Amplifiers

Convenient Signal Processing, Input Flexibility, And More Power!

BOGEN®

Power Plus Modular Flexibility

Bogen's Power Vector modular input amplifier series consists of five models, ranging from 35 to 250 watts of power. Each model accepts up to 8 plug-in modules with 4 levels of priority between modules. Two module bays also accept signal-processing output modules.

Each input has its own independent volume control and a signal/clip indicator. An 11-segment LED meter indicates output level, while a motorized master volume control allows smooth and accurate operation of the unit's volume control from remote control panels (sold separately).

Wide Selection of Advanced Plug-In Modules

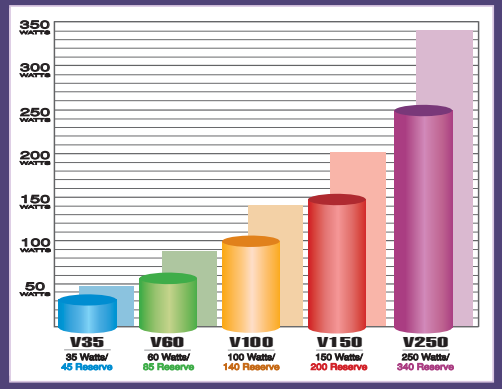
Bogen's new advanced input modules provide a wide range of input types allowing for custom configuration of inputs - in both type and number - for a particular application. Modules are fully-featured for their application, many with Bass/Treble and Gain, Music Ducking, Mute Send and Receive. Mix and match a variety of modules to meet your specific installation needs. Each of Bogen's input modules support different signal-source/processing requirements, including the ability to interface to balanced and unbalanced inputs; stereo or mono; telephone systems/PBXs; transformer-isolated; microphones; tone generator; and bridging.

Signal-Processing Output Modules

Bogen's new output modules offer a cost effective and convenient way to add specific signal processing capability into a system. These modules automatically insert themselves into the audio signal path and eliminate the need for external wiring as well as accessory outboard equipment. The selection includes an ambient noise sensor, compressor/limiter, and parametric equalizer.

Power Handling

Five amplifier models offer minimum power handling capacity of 35, 60, 100, 150, and 250 watts and each has a substantial power reserve. (Typical reserve power @ 1kHz)



Signal/Clip Indicators - A two-color LED indicates the audio activity for each channel's input.
Green - Input signal is present on mix bus.
Red - Module being overdriven.

Bass and Treble Controls - Select the amount of cut or boost of bass frequencies below 100 Hz and treble frequencies above 10 kHz.

LED Output Meter - This 11-segment LED meter monitors the output signal level of the power amplifier.

Power Indicator & Switch - An LED indicates whether the amplifier power status is on or off. A rocker-type switch applies or shuts power to the amplifier.

FRONT PANEL

8 Independent Inputs - Each input source is individually controlled by a corresponding volume control knob for complete system customization.

Average/Peak Switch - The Power Vector can register the average or peak level of the output signal on the 11-segment LED meter.

Master Volume Control Knob - Controls overall volume level of the mixed input signals. The control is motorized and can be adjusted manually or by an optional remotely mounted control panel (see Accessories).

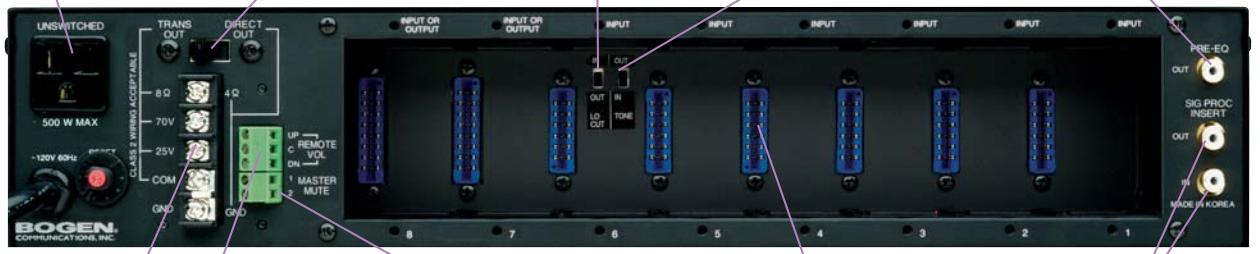
AC Receptacle - Grounded, unswitched power receptacle conveniently provides a maximum 500W capacity for external equipment.

Trans Out/Direct Out Switch - Amplifier can be used with 70V, 25V, and 8-ohm speaker systems through its output transformer or direct drive 4-ohm speakers.

Lo-Cut Switch - This slide switch allows roll off of frequencies below 125 Hz.

Tone Control Bypass Switch - This slide switch allows the effects of the Bass and Treble controls to be bypassed.

Pre-EQ Jack - Insert jack allows unbalanced buffer output signal "post" all unit signal processing, but "pre" any external signal processing equipment connected to the Signal Processing jack.



REAR PANEL

Speaker Output Barrier Strip - A 5-position barrier strip, with clamping washers, provides connections for speaker loads.

Remote Volume Control Terminals - Connect the optional Remote Volume Control Panels to these terminals to provide outboard operation of the Master Volume Control knob.

Master Mute Terminals - These two terminals allow for the muting of all modules regardless of their priority settings.

Module Bays - Each of 8 module bays can accommodate advanced plug-in input modules. Bays 7 and 8 also accept signal-processing output modules. Up to 4 levels of priority can be programmed between modules.

Signal Processing Insert Jacks - Allow external equipment to be inserted between the pre-amp output and the power amp input.

Product Features

- **5 models ranging from 35W to 250W, with a large power reserve**
- **Capable of handling 70V, 25V, 8-ohm, and 4-ohm speaker loads**
- **8 module bays**
- **Wide selection of advanced plug-in modules**
- **2 module bays capable of handling signal processing plug-in output modules**
- **4 levels of priority between modules**
- **11-segment LED output level meter monitors the output level of the power amplifier, with Peak and Average meter switch**
- **Motorized master volume control that can be remotely operated**
- **Bass and treble controls**
- **Two-color LED for each channel indicates input active/clipping**
- **Lockable switch permits user to select either transformer-coupled outputs or a direct low-impedance output**
- **Master mute function overrides all audio from the mixer section of the amplifier**
- **Bass and treble control bypass switch**
- **125 Hz Lo-cut feature**
- **Signal processing insert jacks allow external equipment to be inserted between the pre-amp output and the power amp input**
- **Pre-EQ unbalanced buffer output signal "post" all unit controls, but "pre" any external signal processing equipment connected**
- **Grounded convenience receptacle**
- **Available security cover with break-away tabs**
- **2 rack spaces high (3-1/2")**
- **UL/cUL listed**

Unique Functions

Signal-Processing Output Modules

Each Power Vector amplifier accepts up to two signal-processing output modules. The amplifier automatically detects the presence of an installed signal-processing output module, and automatically inserts it into the audio signal path of the amplifier. All connections are done internally, so there is no need for patch cords to connect to the inserts. When two output modules are installed, the signal processing effects are cascaded. In addition, each output module includes an unbalanced input that is controlled by the amplifier's input control so an input is not forfeited when an output module is used.

Output modules afford two other benefits:

(1) the effects insert jacks are still available for use by external processing equipment.
(2) the signal processing output modules act on the signal on the raw mix bus signal before any other user controls (such as volume, bass, and treble) can affect it. This then ensures that signal level dependent processors, such as the Compressor/Limiter and the Ambient Noise Sensor modules, perform as intended regardless of front panel control changes.

Available signal-processing output module options include:

Ambient Noise Sensor - Automatically adjusts the level of a page announcement in areas where ambient noise levels are a problem because they are continuously changing. Background music can be allowed or prevented from changing volume through the module.

Compressor/Limiter - This module is a high-quality compressor to minimize the differences in levels of all of the inputs on the mix bus, and as a limiter to keep overall output at a desired level.

Parametric Equalizer - Provides 2 bands of parametric equalization adjustments for filter bandwidth, filter center frequency, and cut or boost plus cut/boost for Bass and Treble.

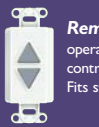
Motorized Master Volume Control

The motorized master volume control allows for a new level of remote control adjustability. The accessory Remote Volume Control keypad controls the movement of the motorized Master Volume Control to raise or lower the system volume. This gives the Power Vector a fully functional and clean way of remotely controlling overall system level.

Accessories:

A variety of optional accessories are available for the Power Vector Amplifier Series.

Security Cover (PVSC) - Prevents tampering with system settings by fitting over front panel controls. Break-off tabs allow access to some controls while keeping others protected, as desired.



Remote Volume Control Panel (RVCP) - Push-button operation allows full-range remote control of motorized master volume control on unit. Multiple control panels can be used for one install. Fits standard single gang electrical box.

Mounting Kit (RPK87) - For mounting in a 2-space rack (3-1/2"). Heavy gauge steel construction.

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PLUG-IN MODULES+

INPUT Modules

BRIDGING INPUT (BRG1R)

Provides buffered input feed to other amplifiers

- Input signal available at buffered output
- Gain/Trim control
- Ground isolated input to eliminate ground loop
- Mute send & receive*
- Variable ducking level when muted
- Fade back from mute
- Buffered output not muted
- Bus assignable
- RCA connectors

MICROPHONE INPUTS (MIC1S, MIC1X)

Low-impedance, transformer-balanced microphone input modules

- Gain/Trim control
- Bass & Treble controls
- Noise gate w/Threshold & Duration
- Limiter w/Threshold control
- 24V Phantom power
- Mute send & receive*
- Bus assignable
- Screw terminals (MIC1S)
- XLR connector (MIC1X)

TONE GENERATOR INPUT (TNG1S)

Multiple tone generator input module

- Select from burst/steady, slow whoop, siren, mechanical bell, Klaxon, night ringer, double chime, and doorbell tones
- Select 4 of 8 tones to trigger
- Momentary & continuous playback modes
- Microprocessor-controlled operation
- Mute send & receive*
- Screw terminal for 4 external trigger connections

MICROPHONE INPUTS (MIC2S, MIC2X)

Low-impedance, electronic-balanced microphone input modules

- Gain/Trim control
- Hi-Cut/Lo-Cut controls
- Voice Enhance control
- Noise gate w/Threshold control
- Limiter w/Threshold control
- 24V Phantom power
- Mute send & receive*
- Bus assignable
- Screw terminals (MIC2S)
- XLR connector (MIC2X)

MONO AUX INPUT (MAX1R)

Unbalanced mono input module

- Gain/Trim control
- Bass & Treble controls
- Variable ducking level when muted
- Mute send with threshold/duration adjust
- Mute send & receive*
- Fade back from mute
- Bus assignable
- RCA connector

TRANSFORMER BALANCED INPUT (TBL1S)

Transformer balanced AUX input module

- Transformer-isolated line level input
- Gain/Trim control
- Bass & Treble controls
- Mute send with threshold/duration adjust
- Mute send & receive*
- Variable ducking level when muted
- Fade back from mute
- Screw terminal connections

STEREO AUX INPUT (SAX1R)

Unbalanced stereo input module

- Gain/Trim control
- Bass & Treble controls
- Variable ducking level when muted
- Mute send with threshold/duration adjust
- Mute send & receive*
- Fade back from mute
- Stereo-to-mono summing option
- Bus assignable
- RCA connectors

BALANCED INPUT (BAL2S)

Stereo, balanced input module

- Stereo, high-impedance, balanced inputs
- Dual gain 0 dB/18 dB
- Professional-quality, low noise performance
- Mutable by higher priority modules
- Variable ducking level when muted
- Fade back from mute
- Screw terminal connections

TELEPHONE INPUT (TEL1S)

Telephone interface input module

- Loop start or ground start trunk interfacing**
- Dry loop interface to paging ports
- Audio-activated paging in dry loop
- Gain/Trim control
- Noise gate w/Threshold control
- Limiter w/Threshold control
- Bus assignable & Transformer-isolated
- Mute send & receive*
- Screw terminal connections

OUTPUT Modules

AMBIENT NOISE SENSOR (ANS1R)

- Maximum Gain control
- Ramp Speed control
- Activity Threshold control
- Ambient mic input threshold control
- Stereo Aux input (summed mono)
- Aux level input control
- Defeatable
- Gradual fade back from mute
- Connect up to 4 sensor mics (1 included)
- Mutable Input (lowest priority only)

COMPRESSOR LIMITER (CMP1R)

- Compressor Ratio control
- Threshold control
- Make-up Gain control
- Bypass switch
- Unbalanced input
- Gradual fade back from mute
- Mutable input (lowest priority only)

PARAMETRIC EQUALIZER (PEQ1R)

- 2 full parametric bands
- Frequency control
- 'Q' bandwidth control
- Gain control
- Bass and Treble control
- Unbalanced input
- Bypass switch
- Mutable input (lowest priority only)
- Gradual fade back from mute

+ Modules Sold Separately * Module can mute or be muted by other modules. ** Loop and Ground Start applications require an external 48V Power Supply - Bogen PRS48 recommended.

Power Vector Amplifier Series

Performance Specifications

MODELS	V250	V150	V100	V60	V35
Power Output (RMS):					
Rated:	250W	150W	100W	60W	35W
*Typical @ 1 kHz:**	340W	200W	140W	85W	45W
Frequency Response					
Transformer:	45-20 kHz; 0/-2 dB				
Direct:	20-20 kHz; 0/-1 dB				
Distortion					
Transformer:	0.5%**				
Direct:	0.1%** (.05% typical @ 1 kHz)				
Signal-to-Noise†					
Fundamental:	-94 dB				
With Aux Module:	-70 dB				
With Mic Module:	-60 dB				
With Tel Module:	-70 dB				
Tone Controls					
Bass Frequency:	100 Hz (+/- 10 dB minimum)				
Treble Frequency:	10 kHz (+/- 10 dB minimum)				
Low Cut Frequency:	125 Hz @ -6 dB/octave				
Sensitivity	0.4V (at module bay connector)				
Output Regulation:	2 dB or better, no load to full load				
Output Impedance					
Transformer-Coupled:	70V, 25V, 8 ohms (bal or unbal)				
Direct Coupled:	4 ohms				
Inserts					
Insert "OUT" Level:	1VRMS (@FRP)				
Insert "OUT" Impedance:	50 ohms maximum				
Insert "IN" Sensitivity:	1VRMS				
Insert "IN" Impedance:	10k ohms minimum				
Pre-EQ Output					
Output Level:	4VRMS (@FRP)				
Output Impedance:	50 ohms maximum				
AC Power Receptacle:	500 watts maximum power, unswitched				
AC Voltage:	120V AC, 60Hz				
AC Current:	5.5A	3.5A	2.0A	1.3A	0.6A
Product Weight (lb.):	40	35	32	28	24
Dimensions:	17" W x 3-1/2" H x 13-1/2" D (all models)				

* Typical, @1 kHz/0.1% THD/4Ω ** THD+N, Maximum, Full bandwidth @ FRP
† Referenced to FRP output level, 20-20 kHz bandwidth limited

Bogen product literature on CD and the Web

54-9260-01A
Printed in U.S.A. 0303

BOGEN COMMUNICATIONS, INC.
50 Spring Street
Ramsey, NJ 07446, U.S.A.
Tel: 201-934-8500 Fax: 201-934-9832
www.bogen.com