

Signal-Processing Modules

When signal-processing output modules are installed into the Power Vector's last two module bays, they automatically insert themselves into the mix bus signal path leading to the power amplifier stage. When two of these output modules are installed, their effects are cascaded with the second to last bay's module processing the signal first and then passing it to the module in the last bay. Two benefits are gained by this innovation: (1) the effects insert jacks are still available for use by external processing equipment, (2) the signal-processing output modules act on the raw mix bus signal before any other user controls, like master volume, bass, and treble. This then ensures that signal level dependent processors, such as the CMP1R Compressor/Limiter and the ANS1R Ambient Noise Sensor modules, perform as intended regardless of front panel master control changes.

Remote Volume Control

The master volume control is motorized. By using a motor to physically move the control knob, a new level of remote control adjustability is achieved.

Regardless of where the master volume control is set on the amplifier, the remote can move it up or down. Since the remote control signal is now the drive signal to the motor, noise on the remote control leads cannot mix in with the amplifier signals. This gives the Power Vector a fully functional and clean way of remotely controlling overall system level.

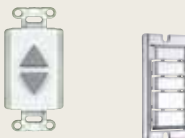
Traditionally, remote volume control was accomplished by having the remote control vary an analog control signal to an opto-resistor in the amplifier. This opto-resistor would further attenuate the signal level in the amplifier, based on the remote control setting. This approach has two drawbacks: (1) the maximum volume that can be achieved by changing the remote control was limited by the master volume control setting on the amplifier, or vice-versa depending on how the amplifier was designed, the remote could lower volume, but could not further increase it; (2) the control signal, because it is analog, is vulnerable to noise. If a 60 Hz hum was picked up by the long remote volume leads, it could cause the opto-resistor to modulate the volume level at the hum frequency.

Accessories

PVSC
Power Vector Security Cover



RVCP
Remote Volume Control Panel



RPK87
Rack Mounting Kit



PVMC
Module Security Cover

MODULES



Input & Signal Processing Modules- See Pages 39 & 40

MODULAR AMPLIFIERS

Power Vector Modular Amplifiers V35, V60, V100, V150, V250

WALL-MOUNTABLE version on Page 40

MIXER version on Page 48

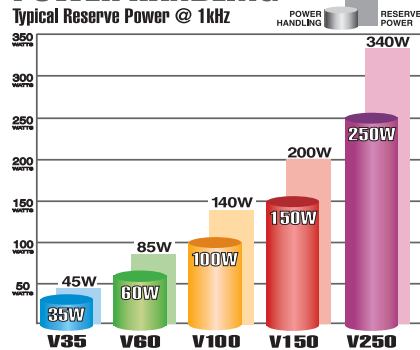


Bogen's Power Vector modular input amplifier series offers a wide range of power levels from which to choose, with five models ranging from 35W to 250W. The amplifiers are designed to work with both high- (70V/25V) and low- (4/8-ohm) impedance speaker systems. Each model includes eight module bays for input modules and allows up to four levels of priority between modules. Two module bays are also capable of accepting signal-processing output modules. Each input channel has an associated signal/clip LED for signal status. An 11-segment LED output meter monitors output signal level, which can be controlled by the Remote Volume Control Panel (RVCP, sold separately). Modules required, but sold separately.

Product Features:

- 5 models ranging from 35W to 250W, each with a large power reserve
- Capable of handling 70V, 25V, 8-ohm, and 4-ohm speaker loads
- 8 input module bays (modules sold separately)
- Wide selection of advanced input modules
- 2 module bays capable of handling signal-processing output modules
- 4 levels of priority between modules
- 11-segment LED output level meter with Average and Peak switch
- Motorized master volume control that can be remotely operated (requires RVCP)
- Bass and treble controls
- Two-color LED for each channel indicates signal active/signal clipping
- Lockable switch permits user to select either transformer-coupled outputs or a direct low-impedance output
- Master mute control mutes all audio from the mixer section of the amplifier
- Bass and treble control bypass switch
- 125 Hz Low Cut feature
- 2 rack spaces high (3-1/2")
- Listed to UL Standard 60065 for US and Canada
- 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, unswitched AC convenience receptacle with a 500W maximum capacity provided for external equipment
- Security cover to protect volume, bass, and treble controls (PVSC, sold separately)
- Module security cover prevents tampering with module controls (PVMC, 8 included)
- Rack mountable (mounting kit RPK87, sold separately)

POWER HANDLING



Rear View

ALL MODULES SOLD SEPARATELY

Technical Specifications, Dimensions, and Weights can be found on Page 79

ADVANCED OUTPUT MODULES

Signal-Processing Output Modules (Input Modules on Page 39)

Bogen's plug-in signal-processing output modules automatically insert themselves into the mix bus signal path leading to the power amplifier stage when installed. *(Shipping weight: 1 lb. each.)*

RELAY INPUT/OUTPUT - RIO1S



- Transformer-isolated, balanced line-level input
- 600-ohm or 10k jumper-selectable input impedance
- 8-ohm, 750mW output
- Input and output level controls
- Relay responds to selectable priority level
- External control of priority muting
- N.O. or N.C. relay contacts
- Input can be muted from higher priority modules, with signal fade back
- Output can gate with relay priority level
- Screw terminal strips
- RJ11 connection with line output and dedicated N.O. relay contact


AMBIENT NOISE SENSOR - ANS1R



ANS1R with Sensor Microphone

- Maximum Gain control
- Ramp Speed control
- Activity Threshold control
- Ambient MIC input threshold control
- Stereo AUX input (*summed mono*)
- AUX level input control
- Gradual fade back from mute
- Connect up to 4 sensor mics (*1 included*)
- Mutable input (*lowest priority only*)
- RCA connectors

Accessories **ANS500M**
 Sensor Microphone
(One included; additional available)



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*)
- RCA connector

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
- RCA connector

MODULAR AMPLIFIERS

Wall-Mount Power Vector Amplifiers WV100, WV150, WV250

The **Wall-Mount Power Vector Series** combines up to 8 modular inputs and signal-processing outputs to meet various application requirements. The amplifier's convenient and efficient wall-mount design provides a protected and accessible audio system in a permanent and inconspicuous mounting.

Product Features:

- 100-, 150-, and 250-watt models; each with large power reserve
- 8 module input bays, accepts up to 2 signal-processing output modules and 8 input modules
- Wide selection of advanced input and signal-processing output modules
- Four priority levels between modules
- 4-ohm, 8-ohm, 25V, and 70V outputs
- Secure, permanent wall mounting (*in-wall with BBF or surface-mount with BBS*)
- 11-segment LED output level meter registers Peak or Average output
- Adjustable output level limiter with active indicator
- Front-mounted tape output provides unbalanced signal level output
- Independent volume controls for each input
- Motorized master volume control, with optional accessory RVCP for remote operation
- External mute control
- Bass and treble controls with center detent
- 125 Hz Low Cut switch
- Tone control bypass switch
- Optionally installable front-mounted input combo jack with 1/4" stereo phone and female XLR capabilities for connection to user-supplied modules
- Thermal, short-circuit, and overload protection
- Thermally controlled 3-speed fan
- Listed to UL Standard 60065 for US and Canada
- Components required for installation: Door (*WMAD*) and Back Box (*BBF or BBS*), both sold separately
- Modules required, but sold separately



RACK-MOUNTABLE version on Page 38

Technical Specifications, Dimensions, and Weights can be found on Page 79

MODULES



Input Modules- See Page 39;
 Output Modules- See Above

Accessories

RVCP Remote Volume Control Panel



Components

NOTE: These items are required for installation: BBF or BBS, and one WMAD.



BBF Flush-Mount Back Box



BBS Surface-Mount Back Box



WMAD Front Cover/Door

Flexible Output Levels

The VMIX was designed to make connections to other sound system components as easy as possible. Its transformer-balanced output provides ground loop isolation and high noise immunity when connected to other balanced inputs of downstream components. This output can provide 3 distinct output voltage ranges to accommodate just about any input type from a microphone input at -50 dBμ to a professional audio input requiring +4 dBμ, as well as a more common commercial level of -10 dBμ. Setting the proper output range is as easy as moving a slide switch. The VMIX provides a separate unbalanced RCA output, which makes simple equipment interconnects a snap.

Signal-Processing Modules

When signal-processing output modules are installed into the Power Vector's last two module bays, they automatically insert themselves into the mix bus signal path leading to the output stage. When two of these output modules are installed, their effects are cascaded with the second to last bay's module processing the signal first and then passing it to the module in the last bay. Two benefits are gained by this innovation: (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, like master volume, bass, and treble can affect it. This then ensures that signal level dependent processors, such as the CMP1R Compressor/Limiter and the ANS1R Ambient Noise Sensor modules, perform as intended regardless of front panel control changes.

Accessories

PVMC
Module
Security Cover



PVSC
Power Vector
Security Cover



RVCP
Remote Volume
Control Panel



RPK87
Rack
Mounting Kit



MODULAR MIXER

Power Vector Mixer VMIX



AMPLIFIED
VERSIONS
on
Pages 38 & 40

This 8-channel Power Vector mixer/pre-amplifier offers a wide variety of operational features and functions for superior audio performance. Eight module bays accept plug-in modules, allowing up to four levels of priority between modules. Security covers for both the front and rear of the unit prevent tampering with settings. For large applications, several Power Vector Mixers can be bridged together.

Product Features:

- Wide selection of plug-in modules
- 8 module bays
- 2 module bays capable of handling signal-processing plug-in output modules
- 4 levels of priority between modules
- 8 inputs, with independent volume controls for each
- LED signal/clip indicator for each channel
- Bass and treble controls
- 11-segment LED output level meter monitors the output level of the mixer with Avg./Peak switch
- Balanced transformer-isolated output
- Balanced output signal level switch (-50, -10, and +4 dBμ)
- Unbalanced signal output jack
- Join multiple Power Vector mixers together using bridging jack and mute terminals
- Motorized master volume control that can be remotely operated (with RVCP Remote Volume Control Panel, sold separately)
- 125 Hz Low Cut feature (switch located in module bay 6)
- Tone control bypass switch (located in module bay 6)
- Module security cover prevents tampering with module controls (PVMC, 8 included)
- Resettable circuit breaker
- Grounded, unswitched AC convenience receptacle with a 500W maximum capacity provided for external equipment
- Power indicator
- Rack mountable (rack mounting kit RPK87, sold separately)
- Security cover to protect front controls and allow access to installer selected controls (PVSC, sold separately)
- Listed to UL Standard 60065 for US and Canada

MODULES



Input & Signal-Processing Modules- See Pages 39 & 40



Rear View

ALL MODULES
SOLD SEPARATELY

Technical Specifications:

Output Level Meter	Frequency Response	Output Impedance	Signal-To-Noise Ratio	Dimensions	Product Weight
11 Segments	±1 dB (20 Hz-20 kHz) balanced-out	100 ohms, unbalanced; 50 ohms @ +4 dBμ, 600 ohms @ -10 dBμ, 5 ohms @ -50 dBμ, balanced	-99 dB, fundamental	17-1/4" W x 3-7/8" H x 14-3/4" D	15 lb.

AMPLIFIER SPECS CHART

Model Numbers	Output Power Rating/Channel	Channels	Frequency Response*	Distortion**	Speaker Outputs	AC Line Draw***	Dimensions	Product Weight
BP460	60W	1	20 Hz to 20 kHz	2% Max	8-ohm/25V, 16-ohm, 25VCT, 70V	180W	15-1/4" W x 3-1/2" H x 8-1/4" D	17 lb.
C10	10W	1	70 Hz to 16 kHz	1% Max	70V, 25V, 16-ohm, 8-ohm, 4-ohm	38W	11-3/8" W x 2-7/8" H x 7-3/8" D	5 lb.
C20	20W	1	70 Hz to 16 kHz	1% Max	70V, 25V, 16-ohm, 8-ohm, 4-ohm	50W	11-3/8" W x 2-7/8" H x 7-3/8" D	6 lb.
C35	35W	1	70 Hz to 16 kHz - Transformer; 20 Hz to 20 kHz - Direct	1% Max	70V, 25V, 16-ohm, 4-ohm direct	85W	14-1/2" W x 3-3/4" H x 11" D	15 lb.
C60	60W	1	70 Hz to 16 kHz - Transformer; 20 Hz to 20 kHz - Direct	1% Max	8-ohm on C35 and C60	148W	14-1/2" W x 3-3/4" H x 11" D	17 lb.
C100	100W	1	200 Hz to 15 kHz	2% Max	8- & 600-ohm	220W	5-1/2" W x 4-1/8" H x 2-1/4" D	19 lb.
GA2	1.5W	1	30 Hz to 12 kHz	2% Max	70V, 25V, 8-ohm	4W	8-1/2" W x 2-3/4" H x 6" D	2 lb.
GA6A	6W	1	30 Hz to 12 kHz	2% Max	70V, 25V, 8-ohm	16W	8-1/2" W x 2-3/4" H x 6" D	5 lb.
GS35	35W	1	65 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% Max	70V, 25V, 25VCT, 8-ohm, 4-ohm direct	0.9A	16-1/2" W x 3-1/2" H x 13-1/2" D	17 lb.
GS60	60W	1	65 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% Max	70V, 25V, 25VCT, 8-ohm, 4-ohm direct	1.3A	16-1/2" W x 3-1/2" H x 13-1/2" D	20 lb.
GS100	100W	1	65 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% Max	70V, 25V, 25VCT, 8-ohm, 4-ohm direct	2.2A	16-1/2" W x 3-1/2" H x 13-1/2" D	23 lb.
GS150	150W	1	65 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% Max	70V, 25V, 25VCT, 8-ohm, 4-ohm direct	3.0A	16-1/2" W x 3-1/2" H x 13-1/2" D	29 lb.
GS250	250W	1	65 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% Max	70V, 25V, 25VCT, 8-ohm, 4-ohm direct	5.0A	16-1/2" W x 3-1/2" H x 13-1/2" D	30 lb.
HTA125A	125W	1	20 Hz to 20 kHz	0.5% Max	70V, 25VCT, 25V, 8-ohm, 4-ohm	260W	19" W x 5-1/4" H x 11" D	36 lb.
HTA250A	250W	1	20 Hz to 20 kHz	0.5% Max	70V, 25VCT, 25V, 8-ohm, 4-ohm	520W	19" W x 5-1/4" H x 11" D	50 lb.
M300	300/600W	2 or 1	20 Hz to 20 kHz	0.5% Max	4- to 8-ohm (2 channel mode); 70V (1 channel mode)	12A	17" W x 3-1/2" H x 18-1/2" D (not including brackets)	41 lb.
M450	450/900W	2 or 1	20 Hz to 20 kHz	0.5% Max	4- to 8-ohm (2 channel mode); 70V (1 channel mode)	15A	17" W x 3-1/2" H x 18-1/2" D (not including brackets)	44 lb.
M600	600/1200W	2 or 1	20 Hz to 20 kHz	0.5% Max	4- to 8-ohm (2 channel mode); 70V (1 channel mode)	20A	17" W x 3-1/2" H x 18-1/2" D (not including brackets)	46 lb.
PMS180	100W 60W 20W	3	70 Hz to 20 kHz - Trans (Amp 1 & 2); 70 Hz to 15 kHz - Trans (Amp 3); 20 Hz to 20 kHz - Direct (Amp 1 & 2); 20 Hz to 15 kHz - Direct (Amp 3)	0.5% - Amp 1 & 2; 1% - Amp 3 (Max)	70V, 25V, 8-ohm, 4-ohm direct	430W	17" W x 5-1/2" H x 12-1/2" D	38 lb.
TPU15A	15W	1	70 Hz to 12 kHz	2% Max	70V, 25V, 8-ohm	0.5A	11" W x 2-3/4" H x 2-3/8" D	4 lb.
TPU35B	35W	1	70 Hz to 12 kHz	2% Max	70V, 25V, 8-ohm	0.75A	11" W x 2-3/4" H x 2-3/8" D	12 lb.
TPU60B	60W	1	70 Hz to 15 kHz	1% Max	70V, 25V, 25VCT, 16-ohm	1.5A	14-1/4" W x 8-3/8" H x 3-5/8" D	15 lb.
TPU100B	100W	1	70 Hz to 15 kHz	1% Max	70V, 25V, 25VCT, 16-ohm	2A	14-1/4" W x 8-3/8" H x 3-5/8" D	18 lb.
TPU250	250W	1	70 Hz to 15 kHz	1% Max	70V, 25V	5A	19" W x 10-1/2" H x 3-7/8" D	28 lb.
V35	35W	1	45 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% - Transformer; 0.1% - Direct (Max)	70V, 25V, 8-ohm, 4-ohm direct	0.6A	17" W x 3-1/2" H x 14-3/4" D	22 lb.
V60	60W	1	45 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% - Transformer; 0.1% - Direct (Max)	70V, 25V, 8-ohm, 4-ohm direct	1.3A	17" W x 3-1/2" H x 14-3/4" D	26 lb.
V100	100W	1	45 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% - Transformer; 0.1% - Direct (Max)	70V, 25V, 8-ohm, 4-ohm direct	2.0A	17" W x 3-1/2" H x 14-3/4" D	28 lb.
V150	150W	1	45 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% - Transformer; 0.1% - Direct (Max)	70V, 25V, 8-ohm, 4-ohm direct	3.5A	17" W x 3-1/2" H x 14-3/4" D	31 lb.
V250	250W	1	45 Hz to 20 kHz - Transformer; 20 Hz to 20 kHz - Direct	0.5% - Transformer; 0.1% - Direct (Max)	70V, 25V, 8-ohm, 4-ohm direct	5.5A	17" W x 3-1/2" H x 14-3/4" D	32 lb.
WV100	100W	1	20 Hz to 20 kHz	0.5% Max	70V direct	2.0A	14-1/8" W x 21" H	27 lb.
WV150	150W	1	20 Hz to 20 kHz	0.5% Max	70V direct	3.5A	14-1/8" W x 21" H	29 lb.
WV250	250W	1	20 Hz to 20 kHz	0.5% Max	70V direct	5.5A	14-1/8" W x 21" H	28 lb.
X300	300W	2	20 Hz to 20 kHz	0.5% Max	70V direct	12A	17" W x 3-1/2" H x 18-1/4" D (not including brackets)	41 lb.
X450	450W	2	20 Hz to 20 kHz	0.5% Max	70V direct	15A	17" W x 3-1/2" H x 18-1/4" D (not including brackets)	44 lb.
X600	600W	2	20 Hz to 20 kHz	0.5% Max	70V direct	20A	17" W x 3-1/2" H x 18-1/4" D (not including brackets)	46 lb.

* @ -20dB FRP Transformer output;
@ FRP for Direct outputs

** Bandwidth limited to frequency response

*** FRP @ 120V AC line voltage

Specifications subject to change without notice.