

DUAL-CHANNEL POWER AMPLIFIERS

M-Class Amplifiers M300, M450, M600



Bogen's M-Class amplifiers provide professional sound installers with exactly what they need from an amplifier: 3 modes of operation — stereo (4-ohm), 70V mono, dual mono (4-ohm); 2 bays for a variety of input modules; up to 600W/ch stereo (4-ohm) or 1200W for 70V mono power; massive power toroid and heat sinks; heavy 14-gauge chassis; patented Back-Slope™ AC voltage stabilization; clip limiters; and DC voltage, over-current, and thermal protection circuits.

Product Features:

- 3 Mono power levels: 600W, 900W, or 1200W for 70V speaker systems
- 3 Stereo power levels: 300W, 450W, or 600W per channel @ 4 ohms
- 3 Modes of operation to choose from: Stereo (4-ohm), Dual Mono (4-ohm), or 70V Mono
- 2 Module input bays for flexible modular input capability
- Low noise, low distortion, and high slew rate
- Professional, high-impedance, balanced stereo input module included (BAL2S)
- 3 Selectable low-frequency roll-off choices
- 2:1 Mixer function when in mono modes
- Insert connections for outboard equipment (in mono modes)
- Post- and Pre-EQ Output Feeds (summed mono out in stereo mode)
- DC, overload, short circuit, and thermal protection circuits
- Clip limiting circuits for speaker protection
- Power-saving Sleep Mode for intermittent use
- Status, Signal, and Clip/Limit indicators
- Back-Slope AC voltage stabilization for dependable performance over varying AC line voltages
- Recessed volume control knobs (behind cover)
- Mounts in 2 rack spaces (3-1/2") directly stackable
- 2 Independent, continuously variable cooling fans
- Easily removable front fan grilles with filters
- Stable into 2-ohm loads
- Listed to UL Standard 60065 for US and Canada

70V Speaker Output -

For 70V constant voltage speaker systems. Provides a single channel of amplification.

Low Cut Filter Switch - Select a low-frequency roll-off of 65 Hz or 125 Hz for transformer-coupled and horn speakers. Flat position allows full low-frequency performance.

Module Bay - The unit can accept one or two Bogen input modules. Each amplifier comes with a balanced, high-impedance stereo input module.

Cooling Fans - Two independent, variable-speed cooling fans respond only as needed to keep the amplifiers cool and reduce dust build-up.

Rear Panel



Low-Impedance Outputs - For 4- to 8-ohm speaker loads. Unit is stable into loads as low as 2 ohms.

Effects Loop - Provides insert point for outboard signal-processing equipment when the amplifier is in either 70V Mono or Dual Mono modes (modular inputs are in a 2:1 mixer configuration).

Operational Mode Selector - Choose one of three settings to meet application needs: 70V Mono, Dual Mono (4-ohm), or Stereo (4-ohm). See the sidebar on this page for description of operating modes.

Output Feeds - In mono modes, the connectors provide output signal feeds both before and after any outboard signal-processing. In stereo mode, the Pre-EQ connector provides mono mix output of the stereo input signal.

Channel Balance Control (in Dual Mono operation mode) - Allows the output level of one channel to be lower than the other channel's output level.

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

Modular Amplifier

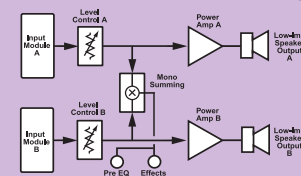
The M-Class Series of amplifiers are modular amps that can accept up to two input modules per unit. These modules offer a cost effective and convenient way to add a variety of features to a system. A balanced line input module (BAL2S) is shipped with each unit. See page 39.

Modes of Operation

Each model includes a 3-position switch that can be set to one of three modes of operation: Stereo mode, 70V Mono mode, or Dual Mono mode.

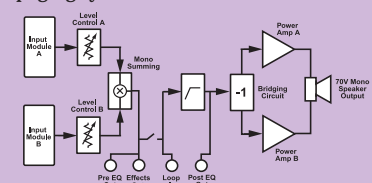
• Stereo

In this mode, the amp supplies two independent channels of low-impedance amplification. These channels can be used to supply left and right audio for stereo installations of 2 separate zones of amplification with different audio programs.



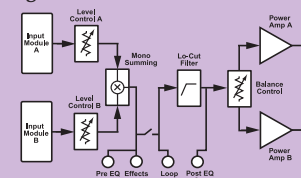
• 70V Mono

In this mode, the amp supplies a single channel of amplification. This mode also mixes the signals from each input module into a mono program. By assigning each module to a different bus, a 2:1 mixer is formed with the front-mounted level controls adjusting the mix. In addition, one module can be set to mute the other when it is active, thereby providing an effective paging system.



• Dual Mono

This mode is similar to the 70V Mono mode except that in this mode the amp supplies two channels of low-impedance amplification. This mode still mixes the input signal from the different modules but a Channel Balance control is provided to adjust the output levels of one channel against the other.



MODULES



Accessories



AMPLIFIER FEATURES CHART

| Amplifier Output Power Rating/Channel | Model Numbers | Amp Channels | Input Types | | | | | | Signal Processing | | | | | | Music Muting | | | | Mounting | | | Page Number | | | | | |
|---------------------------------------|---------------|--------------|---|-------------------------------------|--|----------------------|----------------|-------------------|-------------------|-----|----|-------------|--------------|---------------|--------------|-------------|--------------|---------------|--------------|------------|-------------|-------------|------------|--|--|----|----|
| | | | TEL Input [†] 600-ohm Balanced | MC Input [†] Lo-Z Balanced | AUX Input [†] Hi-Z Unbalanced | Balanced Inputs Hi-Z | Modular Inputs | Audio Enhancement | Loudness Contour | ALC | EQ | Bass/Treble | Tone Control | Variable Mute | Auto Mute | Manual Mute | Night Ringer | Remote Volume | Output Meter | Wall Mount | Shelf Mount | | Rack Mount | | | | |
| 1.5W | GA2 | 1 | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | 42 | |
| 5W | GAG | 1 | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 42 |
| 10W | C10 | 1 | 1 | 2 (1) | 0 (1) | | | | | | | | | | | | | | | | | | | | | | 42 |
| 15W | TPU15A | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 43 |
| 20W | C20 | 1 | 1 | 2 (1) | 0 (1) | | | | | | | | | | | | | | | | | | | | | | 42 |
| 35W | C35 | 1 | 1 | 2 (1) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 42 |
| 35W | GS35 | 1 | 0 (1) | 6 (4) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 41 |
| 35W | TPU35B | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 43 |
| 35W | V35 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 38 |
| 60W | BPA60 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 46 |
| 60W | C60 | 1 | 1 | 2 (1) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 42 |
| 60W | GS60 | 1 | 0 (1) | 6 (4) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 41 |
| 60W | TPU60B | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 43 |
| 60W | V60 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 38 |
| 100W | C100 | 1 | 1 | 2 (1) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 42 |
| 100W | GS100 | 1 | 0 (1) | 6 (4) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 41 |
| 100W/60W/20W | PM3180 | 3 | 0 (1) | 2 (1) | 4 | | | | | | | | | | | | | | | | | | | | | | 47 |
| 100W | TPU100B | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 43 |
| 100W | V100 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 38 |
| 100W | WV100 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 40 |
| 125W | HTA125A | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 46 |
| 150W | GS150 | 1 | 0 (1) | 6 (4) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 41 |
| 150W | V150 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 38 |
| 150W | WV150 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 40 |
| 250W | GS250 | 1 | 0 (1) | 6 (4) | 1 (2) | | | | | | | | | | | | | | | | | | | | | | 41 |
| 250W | HTA250A | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 46 |
| 250W | TPU250 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 43 |
| 250W | V250 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 38 |
| 250W | WV250 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 40 |
| 300/600W | M300 | 2/1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 45 |
| 300W | X300 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 44 |
| 450/900W | M450 | 2/1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 45 |
| 450W | X450 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 44 |
| 600/1200W | M600 | 2/1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | 45 |
| 600W | X600 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 44 |

- Feature Included
 - Features determined by type of module installed
 - Balanced input available with accessory plug-in transformer (TL100 or TL600)
 - Accessory kit required for mounting
 - Contact closure activation only
- * Some inputs are switch selectable. The number in parentheses shows the maximum number of inputs when switched.
- † BALSZ balanced input module included standard; uses one modular input bay.

Specifications subject to change without notice.

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. |

* @ -248 FRP Transformer output;
@ FRP for Direct outputs

** Bandwidth limited to frequency response

*** FRP @ 120V AC line voltage

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