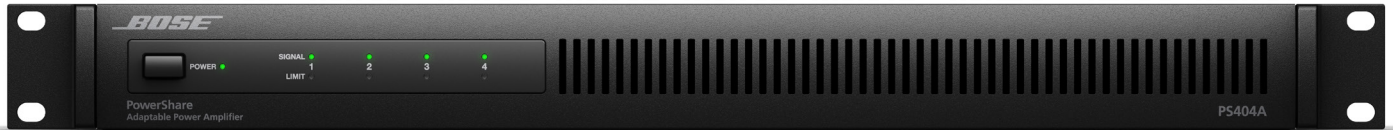


# PowerShare PS404A

## adaptable power amplifier

BOSE

PROFESSIONAL



## Product Description

Bose PowerShare PS404A adaptable power amplifier delivers 400 watts for fixed-install applications. Through patented technology, total amplifier power is shared across all output channels, allowing installers the freedom to utilize power where needed. With support for both low- and high-impedance loads up to 100V, PowerShare amplifiers adapt to a wide range of applications. Onboard configurable loudspeaker processing and direct access to zone controllers eliminate the need for an additional signal processor in many installations, while outstanding audio performance and reliability are assured with patented technologies inherited from the field-proven PowerMatch<sup>®</sup> line. With the inclusion of AmpLink, up to 24 digital audio channels can be sent to the amp from a Bose DSP via a shielded CAT 5 cable. This unique set of features and technologies makes PowerShare one of the most versatile high-performance amplifiers available.

## Key Features

- **PowerShare Technology** – Patented PowerShare technology allows the total 400 watts of power to be shared asymmetrically across all outputs, as each output is capable of delivering full power. Instead of selecting amplifier power based on the needs of the largest zone, installers now have the freedom to use total amplifier power in the application. This enables more flexibility during the initial design, or later on-site when making unplanned changes that take advantage of surplus power.
- **Load-Independent Outputs** – Each channel can be configured for low-impedance (4-8  $\Omega$ ) or high-impedance (70/100V) applications without bridging, use of jumpers, or software settings.
- **DFL™ System** – The Dual Feedback Loop system, inherited from the field-proven Bose PowerMatch<sup>®</sup> amplifier line, improves performance and reliability through continuous monitoring and control of both the current and voltage delivered to each output load. This combination provides improved linearity and lower distortion, while protecting loudspeakers.
- **Integrated Loudspeaker Processing with Optional PowerShare Editor Configuration** – For applications requiring additional signal processing the PowerShare Editor Software offers real-time selection and control of Bose loudspeaker EQs, 9-band PEQs, matrix mixing, crossover, delay, and mute/output polarity through a USB connection. For basic setups without a PC, rear-panel settings allow installers to recall Bose loudspeaker equalization and protection per output channel. These features eliminate the need for an external signal processor in many applications.
- **AmpLink** – Transports up to 24 uncompressed, near zero latency, digital audio channels between Bose DSPs and the PowerShare PS404A via shielded CAT 5 cable. The amp also supports a THRU path for daisy chaining up to 8 other Bose AmpLink amplifiers, at a distance of up to 10 m between products. Any combination of AmpLink amplifiers can be daisy chained.

- **ControlCenter Zone Controller**

**Accessories** – Bose ControlCenter CC-1 zone controllers can be directly attached to outputs, further extending stand-alone amplifier applications.

- **Auto-Standby** – Designed to save power consumption when not in use. PowerShare amplifiers can be configured to automatically enter standby mode when the audio signal falls below a set threshold, then wake when audio returns.

## Applications

Designed for a wide range of applications, including:

- Performing arts venues
- Houses of worship
- Conference centers
- Retail stores
- Restaurants and bars
- Hospitality venues

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### Technical Specifications

POWER RATING	
Amplifier Power	4 x 100 W (THD+N < 0.04%, 1 kHz, 4-8 Ω, 70/100V)
Maximum Power per Channel	400 W @ 4-8 Ω, 70/100V
Gain (Low-Z mode)	30.2 dB
Gain (70V mode)	35.0 dB
Gain (100V mode)	38.0 dB

AUDIO PERFORMANCE	
Frequency Response	4-8 Ω: 20 Hz - 20 kHz (+/- 0.5 dB @ 1 W); 70/100V: Same as 4-8 Ω with 50 Hz high-pass filter
Channel Separation (Crosstalk)	> 85 dB @ 1 kHz, > 65 dB @ 20 kHz
Signal to Noise Ratio	100 dB (at rated power, A-weighted)

AUDIO INPUTS	ANALOG	AMPLINK
Input Channels	4 balanced	24 digital
Connectors	12-pin Euroblock	RJ-45 (Input)
Input Impedance	20 kΩ	
Maximum Input Level	20 dBu (at 12 dBu sensitivity setting)	
Sensitivity	4 / 12 dBu (low / high sensitivity)	

AUDIO OUTPUTS	ANALOG	AMPLINK
Outputs	4	24 digital
Connectors	8-pin inverted Euroblock	RJ-45 (Input)

INTEGRATED DSP	
A/D and D/A Converters	24-bit / 48 kHz
Processing Functions	Matrix mixer, loudspeaker EQ, real-time 9-band PEQ, Vpeak/Vrms limiters, delay, band pass, mute/output polarity inversion
Loudspeaker Presets	Flat, DS16, DS40, DS100, FS3B, 402, 802, MA12EX, RMU105 and RMU108
Audio Latency	< 1 ms (any analog or Amplink input to loudspeaker output)

INDICATORS AND CONTROLS	
Power LED	Solid green: Power is on. Blinking green: Unit is in standby mode. Solid amber: Thermal fault. Solid red: Supply fault.
Input Signal LED	Green: Signal present. Amber: Input is near clipping. Red: Input is clipping. Solid red: Indicates a fault.
Output Limit LED	Amber: Amplifier limiting an output. Blinking red: Amplifier muted. Solid red: Indicates a fault.
Controls, Front Panel	Power On/Off
Controls, Rear Panel	Amplifier mode DIP switches, loudspeaker EQ dials, input select dial, output attenuators

ELECTRICAL		
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)	
AC Power Consumption	120 VAC: 14 W (Standby), 500 W (Max)	230 VAC: 14 W (Standby), 500 W (Max)
Mains Connector	Standard IEC (C14)	
Maximum Inrush Current	14.14 A (230 VAC / 50 Hz), 8.04 A (120 VAC / 60 Hz)	
Protections	High temperature, output short, extra high frequency (EHF), excessively low or high AC line voltage	

PHYSICAL	
Dimensions (H x W x D)	44 mm x 483 mm x 414 mm (1.7" x 19.0" x 16.3")
Shipping Weight	7.8 kg (17.2 lb)
Net Weight	6.4 kg (14.1 lb)
Cooling System	Microprocessor controlled, variable speed fans, left to right air flow

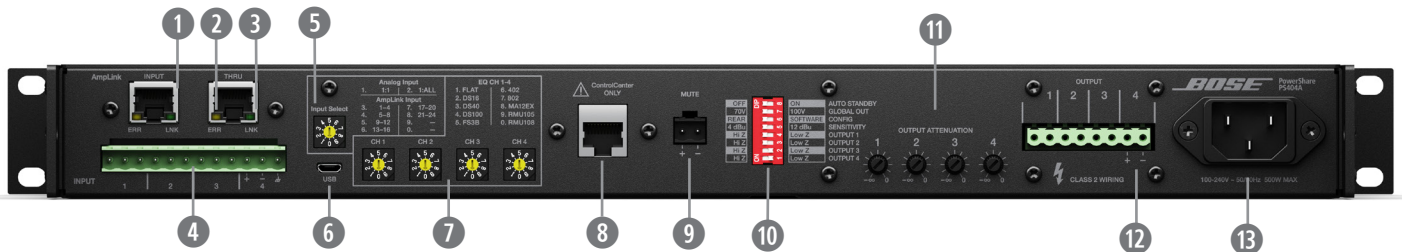
GENERAL	
Inputs (Control)	RJ-45 remote input for volume control using the CC-1 ControlCenter zone controllers, or for connection to the CV41. Micro-USB input for configuring the amplifier with PowerShare Editor software. Mute input control.

For additional specifications and application information, please visit [pro.bose.com](http://pro.bose.com). Specifications subject to change without notice.

# PowerShare PS404A adaptable power amplifier



- 1 POWER SWITCH** - ON/OFF AC power.
- 2 POWER LED**
  - Solid green LED indicates the unit is ON.
  - Blinking green LED indicates the unit is in low-power mode.
  - Solid amber LED indicates an over-temperature fault.
  - Solid red LED indicates a power supply fault.
- 3 INPUT 1, 2, 3, 4 SIGNAL LED** - Each LED operates independently.
  - Green LED indicates signal is present.
  - Amber LED indicates signal is near clipping.
  - Red LED indicates clipping.
  - LEDs will display solid red if a power supply fault is detected.
- 4 OUTPUT 1, 2, 3, 4 LIMIT LED** - Each LED operates independently.
  - LED is amber when the amplifier is limiting the corresponding output due to exceeding the specified loudspeaker  $V_{peak}$  or  $V_{rms}$  limits.
  - If the sum of the amplifier outputs exceeds 400 watts, then the amplifier will limit all outputs equally, and all LEDs will show limiting simultaneously.
  - LEDs will display solid red if an amplifier, power supply, or EHF fault is detected.
  - LEDs will blink red when all outputs are muted.



- 1 AmpLink** - INPUT RJ-45 connector that receives up to 24 digital channels from a Bose AmpLink product. The amp also supports a THRU path for daisy-chaining all 24 digital audio channels to other Bose AmpLink products, at a maximum distance of 10 m between products.  
**CAUTION:** Shielded EIA/TIA 568B straight CAT 5 cable, or equivalent, is required for proper AmpLink operation. Unshielded cable is not supported and may cause AmpLink to operate improperly. Do NOT connect either RJ-45 port to an Ethernet-based network.
- 2 AmpLink ERR LED** - Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.
- 3 AmpLink LNK LED** - Solid green indicates normal operation
- 4 ANALOG INPUTS** - Balanced 12-pin Euroblock line-level input connector.
- 5 INPUT SELECT** - Dial selects if analog or AmpLink audio inputs are used. The default state is analog 1:1.
- 6 MICRO-USB** - Connect the amplifier to a PC using a USB connection. This allows you to use the PC-based PowerShare Editor software to configure the advanced features of the amplifier.
- 7 CHANNEL 1, 2, 3, 4 EQ** - Each dial provides loudspeaker equalization presets per channel: DS 16, DS 40, DS 100, FS3B, 402, 802, MA12EX, RMU105, and RMU108. Use the Flat setting for FS3 Omni Systems.
- 8 CONTROLCENTER** - RJ-45 input connector for Bose CC-1 ControlCenter zone controllers or CV41 4-to-1 converter only.
- 9 MUTE** - Contact closure connection where a short across the mute connector will mute all outputs. Mute polarity can be inverted with the PowerShare Editor software.
- 10 DIP SWITCHES** - A bank of switches used to set amplifier configuration.
- 11 OUTPUT ATTENUATION 1, 2, 3, 4** - Output attenuators for each output. Turn the controls clockwise to decrease attenuation and counter-clockwise to increase attenuation.
- 12 OUTPUT** - Inverted 8-pin Euroblock connector for loudspeaker connections. Each channel can deliver up to 400 watts regardless of load into 4  $\Omega$ , 8  $\Omega$ , 70V, or 100V. Outputs are not bridgeable.
- 13 AC INLET** - Removing the AC cord when the amplifier is on is equivalent to powering down using the front panel power switch, and is an acceptable power-down method.

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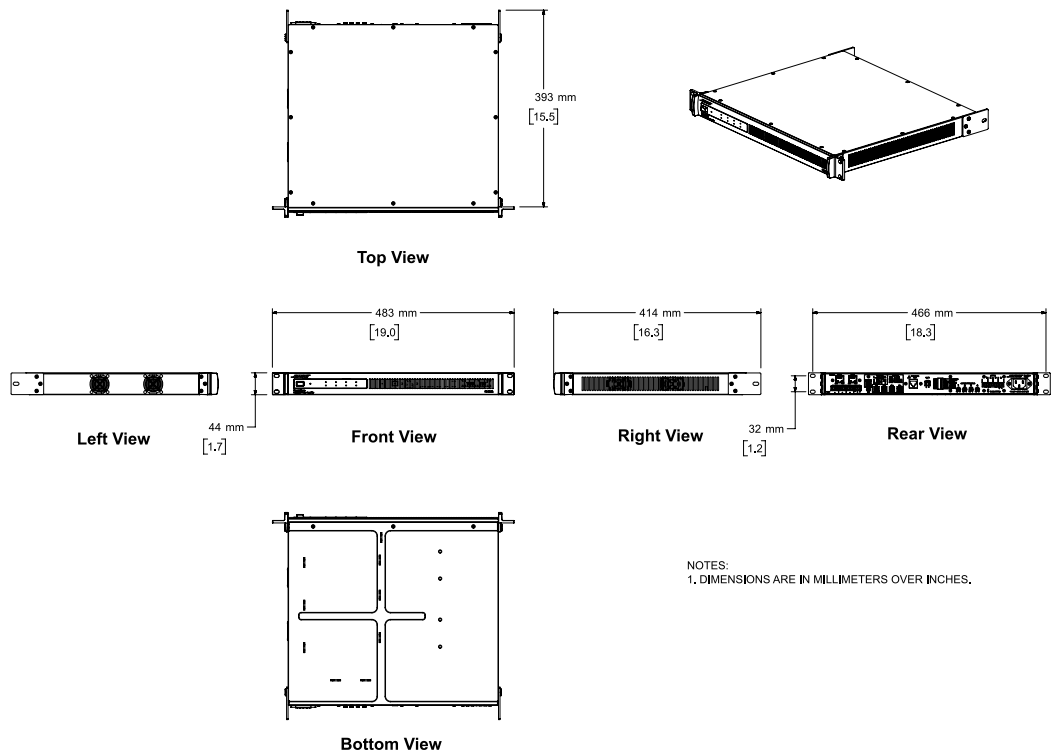


## AC Current Draw and Thermal Dissipation Information

Amplifier rated channel power is 400 W, distributed across four outputs for the PS404A.

PS404A AC Current Draw and Thermal Dissipation (120 VAC, 60 Hz)						
Test Signal & Power Level	Load Configuration (All channels driven)	Total Audio Output, W	Line Current, A	Thermal Dissipation, Max		
				Watts	BTU/hr	kCal/hr
<b>Power On, Idling</b>		0	0.63	76	258	65
<b>1/8th Rated Power</b> IEC268 Bandlimited Pink Noise	4-8 Ω	50	1.25	100	341	86
<b>1/8th Rated Power</b> IEC268 Bandlimited Pink Noise	70/100V	50	1.20	94	321	81
<b>1/3rd Rated Power</b> IEC268 Bandlimited Pink Noise	4-8 Ω	133	2.10	119	406	102
<b>1/3rd Rated Power</b> IEC268 Bandlimited Pink Noise	70/100V	133	2.00	107	365	92
PS404A AC Current Draw and Thermal Dissipation (230 VAC, 50 Hz)						
Test Signal & Power Level	Load Configuration (All channels driven)	Total Audio Output, W	Line Current, A	Thermal Dissipation, Max		
				Watts	BTU/hr.	kCal/hr.
<b>Power On, Idling</b>		0	0.33	76	259	65
<b>1/8th Rated Power</b> IEC268 Bandlimited Pink Noise	4-8 Ω	50	0.66	102	347	88
<b>1/8th Rated Power</b> IEC268 Bandlimited Pink Noise	70/100V	50	0.60	88	300	76
<b>1/3rd Rated Power</b> IEC268 Bandlimited Pink Noise	4-8 Ω	133	1.10	120	409	103
<b>1/3rd Rated Power</b> IEC268 Bandlimited Pink Noise	70/100V	133	1.00	97	331	83

## Mechanical Diagrams



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### Safety and Regulatory Compliance

The PowerShare PS404A adaptable power amplifier complies with CE requirements and is UL listed according to UL60065 (8th edition) and CAN/CSA C22.2 No. 60065-16; CB approved, according to IEC60065 (8th edition), including group and national differences. This model also complies with FCC Part 15B Class A, ICES-003 Class A, EN55032, EN55103-2:2009, CISPR 13: Ed. 5.0 (2009-06), and CISPR-32 requirements. The product must be used indoors. It is neither designed nor tested for use outdoors, in recreational vehicles, or on boats.

### Product Codes

PowerShare PS404A adaptable power amplifier

US-120V	791323-1410
EU-230V	791323-2410
JP-100V	791323-3410
UK-230V	791323-4410
AU-240V	791323-5410

### Accessories

ControlCenter CC-1 zone controller

US-Black	768932-0110
US-White	768932-0210
EU-Black	768932-2110
EU-White	768932-2210
JP-Black	768928-3110
JP-White	768928-3210

ControlCenter CV41

4-to-1 converter	768928-0010
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PowerShare Editor software