

PA Series Power Amplifiers

Sales Guide



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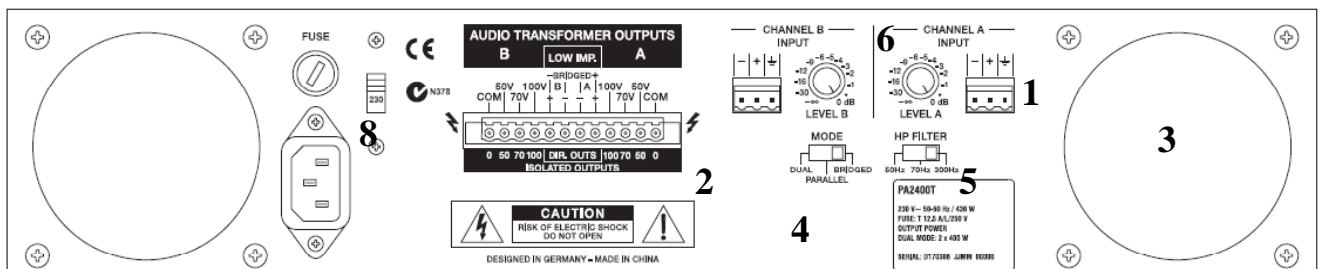
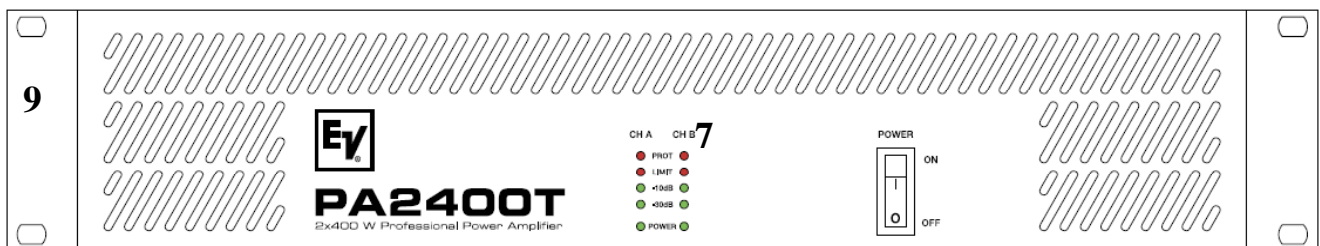
The PA series of professional rack mount power amplifiers are designed for professional/commercial audio and public address system installations where expandability and flexibility is the ticket. These new units are exceptional values, loaded with features and are easy to install in a variety of system designs.

The PA series consists of five models ranging from 160 watts per channel to 470 watts. There are common features and performance specifications with the major theme of the product being superior reliability with a “value” price tag. The product line also gives as an added bonus key enhanced features often provided only on more expensive products including a comprehensive power protection system and advanced cooling technology.

The PA Series Product Position is..... Value Priced Reliability!

All units incorporate the following advanced features:

1. Balanced phoenix style input connectors – makes installation easy.
2. A single phoenix style connector block for all output modes.
3. Continuously variable speed ultra quiet cooling fan
4. Bridge mode operation on all multi channel models provides power flexibility.
5. Switch selectable hi-pass filter at either 50Hz or 300Hz meets any installation requirement.
6. Independent rear panel level controls provided for each channel
7. Comprehensive 4-way power protection package with comprehensive LED monitor and level display
8. All models provide multi-voltage operation from 110-240vac.
9. Integrated “rack ears” allow for rack mounting without additional accessories.



Careful Design – Rigorous Testing

When talking about the PA series amplifiers with your contractors it's critical to note that all of these products were completely designed and tested by our own engineering staff at our electronics design group in Straubing Germany. The PA series incorporates all of the same design methods and philosophy as all the other EV amplifiers we produce. The only difference is that they are assembled at a state of the art production facility in Mainland China and rigorously tested according to our standards.

Now let's go over each of the major features of the PA series in detail. We'll highlight each area and talk about it's value to your contractor.

The Connections - Fast and Easy

The input connectors are female 3pin phoenix style which provide balanced audio capability and the speaker outputs are gathered on a single phoenix style quick disconnect block to facilitate pre-wiring of the installation. The output connectors are male multi-pin phoenix style connectors to eliminate the chance of accidentally plugging them into the input terminal pins. These connectors provide the connection points for driving low impedance loudspeaker loads, as well as 70.7 or 100 volt distributed systems on several models. The independent stepped rear panel level controls are easy to adjust and provide precise settings to easily balance system levels.

The Construction - Designed To Run Long And Cool

The physical chassis of the PA series is also designed for reliability. Its' ample internal cooling capacity ensures reliable operation. The PA series runs cool and stable with the direct flow thru chassis layout. The infinitely variable cooling fans run exceptionally quiet in all modes. Extra heavy gauge chassis sheet metal with built in front panel rack "ears" and full size rear rack supports allow for a solid and secure installation.

The Performance – Clean Reliable *Flexible* Power

All the PA amplifier models feature a low distortion amplifier design that can be bridged for more power flexibility in multi channel models. With an extremely low 0.1% THD and wide 10Hz to 50kHz power bandwidth, these amplifiers deliver clean colorless sound. The superior output transformer in the "T" models effectively resists saturation down to 20Hz and the switch-able hi-pass filter further prevents low frequency distortion in critical applications.

The Reliability - A Complete Protection Package

A comprehensive 4-way protection package in every PA series amplifier helps protect the amplifier and speaker for reliable long term performance. The package provides complete protection for excessive temperature, audio limiters, power up delay and peak current limiters. All PA series models provide excellent headroom of up to 20% for a wide dynamic range on music signals. The onboard dynamic limiter ensures that driving the amplifier into clipping on the PA1250T , 2250T and 2400T will not generate excessive distortion. All the "T" models feature toroidal output transformers for exceptional speaker isolation. This virtually eliminates the possibility of speaker damage through shorts or other anomalies, which are possible in direct drive 70V/100V designs.

What's the Competition?

The key competitors for this product include Crest, Bogen, along with one series of QSC and Crown to a lesser extent. All of these amplifiers are good in their own right but none of these manufacturers can offer the comprehensive solution that EV can. Once again EV can provide both high end and



value oriented state of the art products at every point in the audio chain. The new PA series is one more example of that tradition. You can view a complete competitive list in a chart at the end of this sales guide.

What EV Products “Go With” The PA Series?

One of the most exciting dimensions to this product line you can tell your contractors is that the PA series will broaden the appeal of their “EV spec’d” jobs dramatically. By combining the PA series with products like EVID or ZX series speakers, the Dynacord DRM4000, a variety of ProAnnounce systems, many EV speakers and even certain NetMax installations, you have greatly improved the chances that the job will go all EV!

Just a few of the typical markets and applications for the PA series....

- Warehouses – Ideal with ProAnnounce paging matrix electronics and PA430t horns
- Small Stadiums – Perfect with CobreFlex IIB paging horns
- Auditoriums – Great in combination with EV FRI series speaker models!
- Schools – ProAnnounce and EVID C4.2 are perfect here.
- Hotel meeting rooms – great for room combining! – NetMax N8000 and EVID C4.2’s
- Shopping Malls – Ideal with the EVID C8.2HC and NetMax N8000
- Retail stores – EVID and ZX1’s make a great combination with the DRM4000
- Churches – ZX1i’s, SX300 and EV FRI’s are perfect here
- Office lobbies – EVID 4.2’s and C8.2’s are great for smooth audio
- Hotel conference rooms – EVID C4.2’s for hidden high quality audio.

.....And any other installation involving sound reinforcement, background music, paging etc...

A Couple Of System Examples.....

Complete cost for a small two zone retail /bar/restaurant system:

Product	Description	Quantity
Dynacord DRM4000	8 input 2 zone programmable system controller	1
EV PA2250T	Dual channel 250 watt 70v power amplifier	1
EVID C8.2	Eight inch ceiling mount speaker systems (pairs)	3
EVID 4.2t	Dual 4" Surface mount speaker systems (pairs)	1
TOTAL SYSTEM COST		

Complete cost for a simple 4 Zone ProAnnounce office/warehouse system:

Product	Description	Quantity
Dynacord DPM4000	Central CPU Priced with all modules	1
DPC4520	Paging Console	1
EV PA4150L	4 channel 160 watt/channel low impedance power amplifier	1
EVID C8.2	Eight inch ceiling mount speaker systems (pairs)	3
EVID 4.2t	Dual 4" Surface mount speaker systems (pairs)	1
TOTAL SYSTEM COST		



PA Series Product Specifications:

	PA2450L		PA4150L		PA2400T			PA2250T			PA1250T	
	2		4		2			2			1	
Number of Channels												
Load Impedance	8ohm	4ohm	8ohm	4ohm	8ohm	4ohm	100V	70V	100V	70V	100V	70V
Rated output power (*rated load) THD<1%, 1kHz	220W	450W	100W	160W	215W	430W	430W	430W	270W	270W	270W	270W
Rated output power (*rated load) THD<0.2%, 20Hz ... 20kHz	200W	400W	75W	150W	200W	400W	400W	400W	250W	250W	250W	250W
Slew rate at 1kHz	28V/µs		16V/µs		25V/µs	46V/µs	65V/µs	46V/µs	18V/µs	61V/µs	61V/µs	41V/µs
Frequency response -1dB, ref. 1kHz	<10Hz -40kHz		<10Hz -40kHz		65Hz -40kHz	65Hz - 20kHz	65Hz - 40kHz	65Hz - 20kHz	65Hz - 40kHz	65Hz - 20kHz	65Hz - 20kHz	65Hz - 20kHz
Damping factor at 100Hz / 1kHz, 4ohm	>250		>250		>250	N/A	>250	N/A	>250	N/A	N/A	N/A
Power bandwidth THD=1%, ref. 1kHz, half power	<10Hz ... >50kHz		<10Hz ... >50kHz		45Hz ... >20kHz			45Hz ... >20kHz			45Hz ... >20kHz	
Input impedance 20Hz ... 20kHz, balanced	>20kohm		>20kohm		>20kohm			>20kohm			>20kohm	
Signal to noise ratio A-weighted	104dB		100dB		103dB			103dB			103dB	
Input sensitivity at rated output power or voltage, 1kHz	0dBu (775mV)		0dBu (775mV)		0dBu (775mV)			0dBu (775mV)			0dBu (775mV)	
THD at rated output power MBW=80kHz, 1kHz			<0.1%		<0.1%			<0.1%			<0.1%	
IMD-SMPTE 60Hz, 7kHz			<0.1%		<0.1%			<0.1%			<0.1%	
DIM30 3.15kHz, 15kHz			<-75dB		<-75dB			<-75dB			<-75dB	
Crosstalk ref. 1kHz, at 10% rated output power												
Power requirements					120V or 230 V, 50Hz -60Hz			120V or 230 V, 50Hz -60Hz				
Protection					Audio limiters, high temperature, peak current limiters, turn-on delay			Audio limiters, high temperature, peak current limiters, turn-on delay				
Cooling					Front-to-rear			Front-to-rear				
Dimensions W x H x D, In. (mm)					19.0 (483) x 3.5 (88) x 16.0 (406)			19.0 (483) x 3.5 (88) x 16.0 (406)				
Weight	36.34lbs (16.5kg)		39.65lbs (18kg)		57.27lbs (26kg)			51.76lbs (23.5kg)			36.34lbs (16.5kg)	

Commercial Power Amplifier Competitive Comparison

Brand	Model	Primary Market	Channels	Power per channel*	Rack Height	TX Outputs
SINGLE CHANNEL						
Ultrak	KAC1120M	Com	1	120	2	Y
TOA	P-906MK2	Com	1	60	2	Y
EV	PA1250t	Com	1	270	2	Y
Ultrak	KAC1240M	Com	1	240	2	Y
Bogen	BPA-60	Com	1	60	2	Y
TOA	P-912MK2	Com	1	120	2	Y
Bogen	HTA-125A	Com	1	125	3	Y
TOA	P-924MK2	Com	1	240	2	Y
Bogen	MT-250D	Com	1	250	3	Y
Bogen	HTA-250A	Com	1	250	3	Y
2 CHANNEL						
EV	PA2450	Com	2	450	2	N
QSC	CX302	Com	2	250	2	N
EV	PA2250t	Com	2	270	2	Y
Crest	CKV100	Com	2	50	2	Y
TOA	IP300D	Com	2	200	2	N
Crest	CKV200	Com	2	100	2	Y
Crown	CH1	Com	2	300	3	Y
QSC	CX302V	Com	2	250	2	Y
EV	PA2400t	Com	2	430	2	Y
Crown	CT-210A	Com	2	105	2	Y
TOA	IP450D	Com	2	300	2	N
Crest	CKV400	Com	2	200	2	Y
Crown	CH2	Com	2	600	3	Y
Crown	CT-410A	Com	2	225	2	Y
QSC	602V	Com	2	440	2	Y
Crest	CKV800	Com	2	400	3	Y
Crown	CT-810A	Com	2	450	3	Y
Crest	CKX150	Com	2	75	3	Y
Crest	CKX300	Com	2	150	3	Y
Crest	CKX500	Com	2	250	4	Y
Bogen	X300	Com	2	300	2	Y
Crest	CKX800	Com	2	400	4	Y
Bogen	X450	Com	2	450	2	Y
Bogen	X600	Com	2	600	2	Y
4 CHANNEL						
EV	PA4150L	Com	4	160	2	N
QSC	CX-204V	Com	4	220	2	Y
Crown	CTS4200	Com	4	220	2	Y
EV/Dynacord	DPA4410PA	COM	4	100	3	Y

As shown in the competitive comparison chart the new PA series models offer far more flexibility at the price that is often as good or better!