PA300 Measurement Power Amplifier

Features:

- High performance measurement power amplifier based on class-D amplifier technology
- Peak output power up to 295 W at 1 % THD+N into 4 Ω
- THD+N = 0.018 % (1 W, 1 kHz, 4 Ω)
- Frequency response 20 Hz~20 kHz
- 102dB dynamic range (A-weighting, 1 kHz, 4 Ω)
- Total power efficiency 73 %~80 %
- Universal mains 100-240 VAC 50-60 Hz
- Thermal, over-current, short-circuit, DC-offset and high-frequency protection
- DC servo for low DC offset
- 2.2 kg Lightweight and portable

Application:

- Drive mid-power sound source for building acoustic
- Reverberation time measurement
- Sound insulation measurement
- Absorption coefficient measurement
- Transfer path analysis

Introduction

PA300 is the measurement power amplifier developed by BSWA for drive mid-power sound source, such as omni sound source, low frequency or mid-high frequency volume source and plane sound source, during building and acoustic field measurements.

PA300 based on class-D amplifier technology, thus achieving a very small size and lightweight with a large output power, making it very suitable for field testing of building acoustic. The peak output power is up to 295 W with excellent THD+N and dynamic range.

All connectors, controllers and indicators are located on the front panel. The power amplifier can therefore be placed on the ground or in any other field for easy access.

Specifications

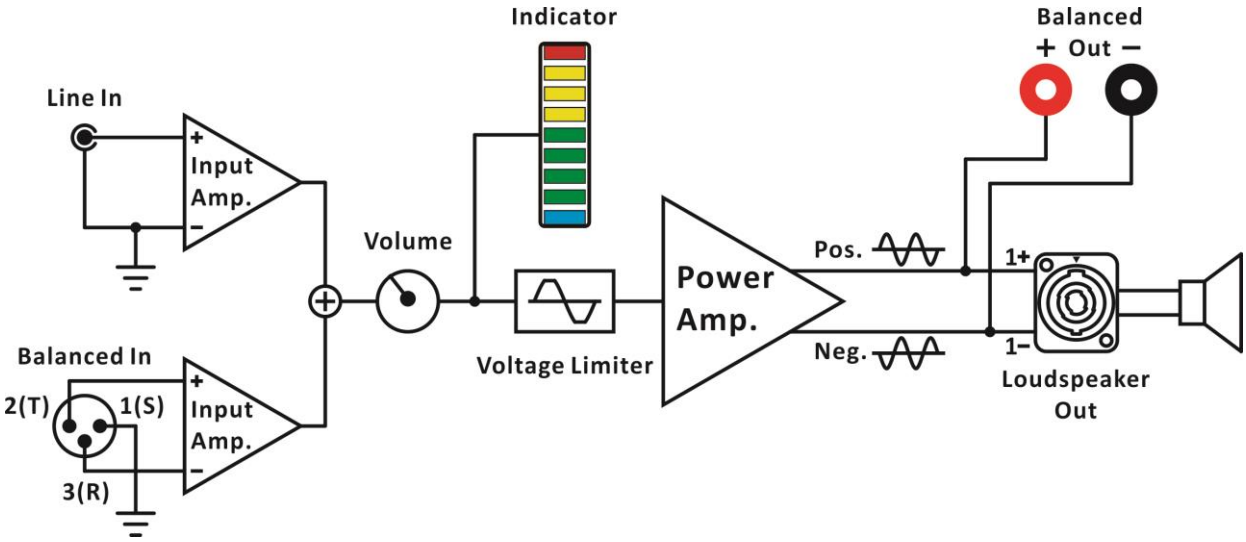
Architecture of Power Amplifier	Class-D
Rated Output Power (Continuous, 25°C)	100 W_{RMS} (4 Ω/8 Ω)
Peak Output Power[1, 3]	295 W_{RMS} (4 Ω), 130 W_{RMS} (8 Ω) (1 kHz, THD+N≤1 %. short duration: duty cycle 1/5, on time 60 s. supply by 230 VAC / 50 Hz)
Maximum Output Voltage[3]	49 V_{Peak} (4 Ω), 46 V_{Peak} (8 Ω)
Maximum Output Current	12 A_{RMS} or 20 A_{Peak}
Minimum Load	2.5 Ω
Maximum Capacitive Loading	220 nF

Output Impedance[2] (Typ.)	0.013 Ω (1 kHz) <0.8 Ω (20 Hz~20 kHz)	
Output Idle Noise[3, 4] (Typ.)	22 Hz~20 kHz, Gain=0 dB: 343 uV_{RMS} (4 Ω), 342 uV_{RMS} (8 Ω)	A-weighting, Gain=0 dB: 264 uV_{RMS} (4 Ω), 264 uV_{RMS} (8 Ω)
Frequency Response[3] (Typ.)	+0.5 dB~-0.5 dB (4 Ω), +0.2 dB~-0.5 dB (8 Ω) (20 Hz~20 kHz)	
Dynamic Range[3] (Typ.)	22 Hz~20 kHz, 1 kHz: 100.0 dB (4 Ω), 99.5 dB (8 Ω)	A-weighting, 1 kHz: 102.3 dB (4 Ω), 101.8 dB (8 Ω)
THD+N[3] (Typ.)	1 kHz, 1 W_{RMS}: 0.018 % (4 Ω), 0.019 % (8 Ω)	1 kHz, 100 % peak power: ≤1 % (4 Ω), ≤1 % (8 Ω)
Output Drive Mode	BTL	
Output Connector	speakON socket and 4 mm banana socket	
Maximum Input Voltage (Input Sensitivity)	1.0 V_{RMS}	
Input Impedance (Typ.)	≥39 kΩ (20 Hz~20 kHz)	
Input Connector	XLR (Balanced) and BNC (Unbalanced)	
Volume Control	-∞~0 dB	
Switching Frequency Range (Amplifier)	100 kHz~500 kHz	
Total Power Efficiency	73 %~80 % (50 W_{RMS}~300 W_{RMS})	
Limiter and Overload Indicator	Built-in voltage limiter with clip indicator on when maximum output amplitude was reached.	
Output Level Indicator	7-step LED indicator: -30 dB~-1.5 dB	
Protection	Thermal, over-current, short-circuit, DC-offset and high-frequency protection.	
Cooling	Fan forced cooling (Automatic fan control based on output power)	
Power Supply	100-240 VAC 50-60 Hz, IEC 60320 Type C13 Connector	
Operation Environment	-10 °C~50 °C, 0 %RH~95 %RH	
Dimensions (mm)	W238 x H90 x D248	
Shipping Case Dimension (mm)	W428 x H153 x D350	
Weight	2.2 kg (power amplifier only)	

Note 1: Contact manufacturer for the peak output power operating time of other supply voltage.
Note 2: Measured directly at the terminals on the PCB.
Note 3: Measured by AUX-0025 filter and dScope Series III analyzer with AES17 20 kHz filter.
Note 4: Measured by connected a 600 Ω external terminal at input.

Front Panel

Block Diagram



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