

AB INTERNATIONAL
280A/480A/680A
980A/1180A
OWNER'S MANUAL



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GENERAL

AB International amplifier products are designed to deliver uncompromised performance in continuous-duty commercial and professional audio applications. The following operating instructions cover the installation and operation of the Precedent Series amplifiers. New owners are encouraged to read the entire contents prior to placing amplifiers into service.

Precedent Series Amplifiers Circuit

Description

To assure absolute long-term reliability, the output section of each channel incorporates multiple Power Transistors, which provide 3 times the amplifiers rated power in watts of dissipation per channel. The output stage is arranged in a fully complimentary format for class AB/2 operation. The bias current is evenly distributed among all output devices. Bias thermal compensation is accomplished by thermally mating a bipolar semiconductor junction to the heat-producing output device. Triple diffused high power driver transistors are employed along with high speed, high voltage silicon annular devices for the pre-driver and inverter stages. Utilization of these components provide the required separation of FT break points for absolute stability. Fully complimentary drive and loading is employed throughout. Only 20 dB of negative feedback is used to reduce forward transfer distortion to minimum levels. VI type energy limiters are incorporated for short circuit protection of the amplifier. Due to the unusually large safe operating area of the output stage, the limiters do not actuate until driving a forty-five degree reactive load of under 2 ohms at full power.

Construction

The amplifiers are designed on an all-modular concept permitting rigorous pre-assembly module testing and maximum service accessibility. Each functional module is fully tested before final assembly. Although components of the highest quality are used throughout, each amplifier is burned in, prior to shipment, at the worst case operating point to eliminate any possibility of component malfunction. All chassis components are precision machined from high quality aluminum and sheet steel stock. The entire package concept is directed toward maximum efficiency of space and structure, accounting for the unit's compact size and lightweight.

Installation

All AB International amplifiers are designed for mounting in a standard 19-inch equipment rack, or one of the many rack type portable cases available on the market. The amplifiers require 5-1/4 inches of vertical panel space, with 11-7/8 inches required behind the panel. Total depth, including handles, is 13-5/16 inches. Front panels are machined from solid aluminum stock, with a black textured finish and sturdy rack mount handles.

Placement of the amplifier is not critical for normal operating conditions, provided that sufficient airflow is allowed to reach the heat sink array. If the unit is to be placed on a shelf, or a similar un-enclosed area, allow four inches clearance behind the heat sink to permit vertical airflow through the array. For installation in a cabinet, allow an additional two inches above and one inch below the amplifier to permit air to be drawn around the back of the unit. If the amplifier is to be mounted in an equipment rack or cabinet with other heat producing equipment, ensure environmental operating temperatures do not exceed 55°C (131°F). Should overheating occur because of inadequate ventilation, thermal protection circuitry will automatically protect the amplifier. When a safe operating temperature is restored, the amplifier will resume normal operation.

Because the amplifiers are capable of delivering high power from a relatively small physical package, considerable heat can build up in cabinets containing several instruments. A good rule of thumb to adopt is; "Provide forced air cooling in any enclosure containing four or more instruments."

Power Connections

Precedent Series power amplifiers are specified for operation from 120-240 Volt, 50-60 Hz mains supply. **Units come from the factory wired for 120 Volts unless otherwise indicated.**

Equipment for domestic (USA) consumption includes a captive cord with a three pin polarized plug. **DO NOT REMOVE THE CENTER GROUNDING PIN!**

In new installations and portable sound systems, or any situation in which the mains power is suspect, it is wise to confirm appropriate voltage and line polarity **BEFORE** connecting the instrument to power sources.

Thermal Protection

Certain conditions of operation (restricted airflow cooling, sustained high power operation into low impedance loads) can result in an increase in output device case temperature sufficient to affect any amplifiers performance.

Should the heatsink reach 95°C, thermal protection circuitry will automatically disconnect the amplifier's output stage from the load (loudspeaker) until the temperature decreases sufficiently. The action of removing the load eliminates output current, resulting in an immediate temperature drop. The thermal protection circuit will automatically reconnect the load when the temperature drops below 95°C.

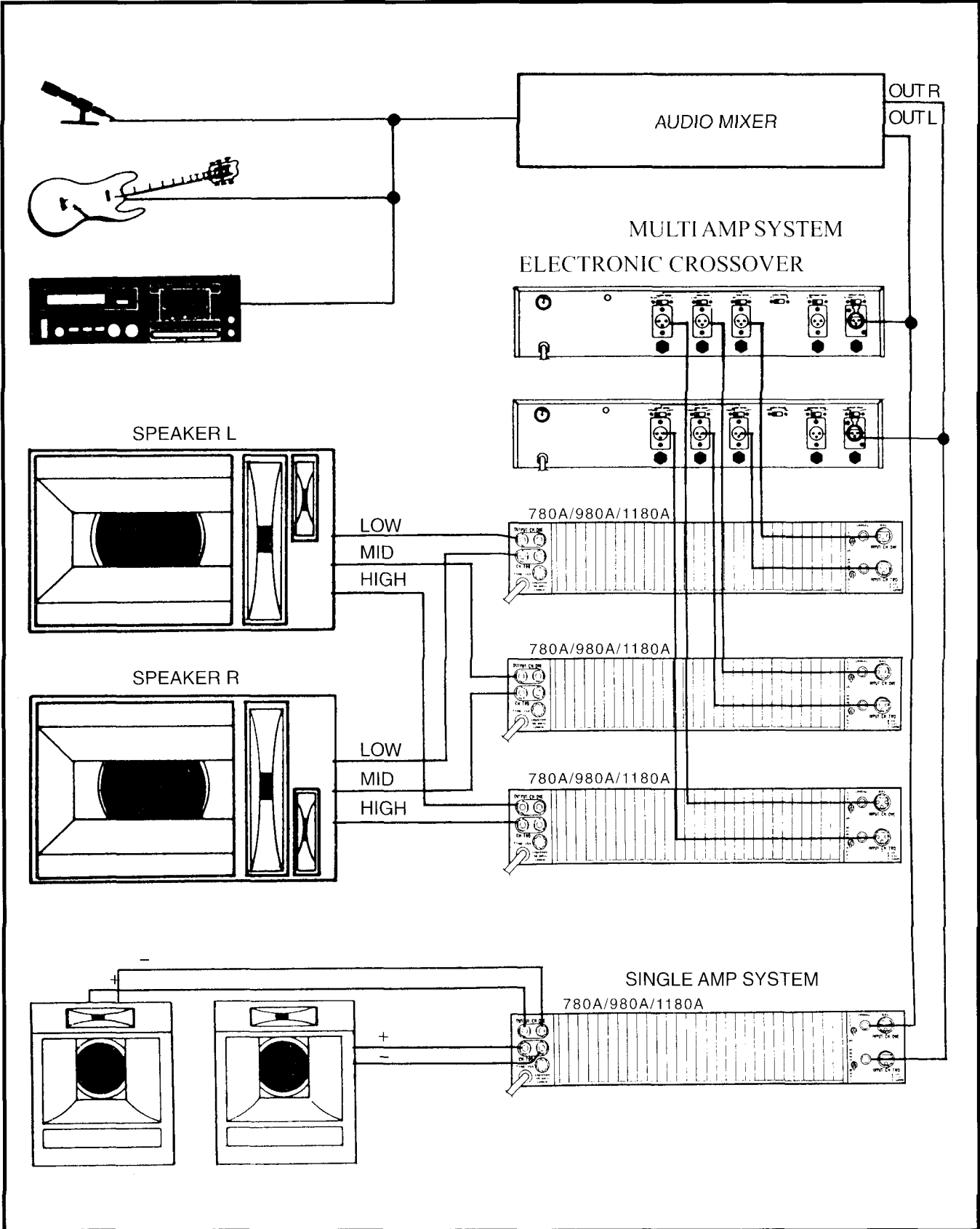
Fan Assist Cooling

To provide continuous operation in adverse cooling conditions a "Venturi Style" fan assist cooling accessory package is available. Amplifiers so equipped use a two level 24 V DC fan. The fan speed is determined by the amplifier heatsink temperature. At maximum speed, the fan has a 110 CFM output to assure proper cooling under sever conditions. This option may be added at the time of purchase or at a later date by your AB International Dealer.

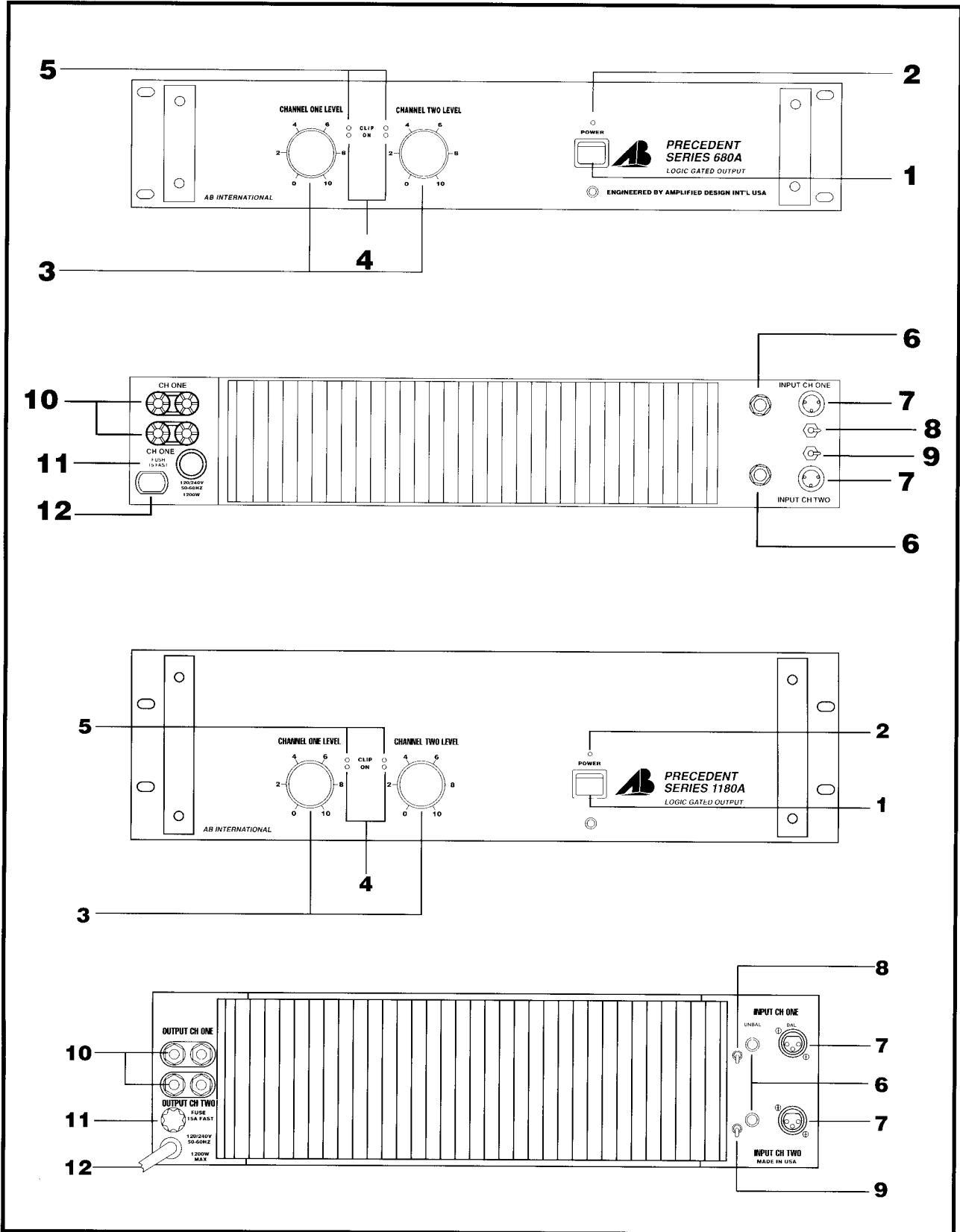
BRIDGED MONO OPERATION

1. Set the DUAL/Mono Switch to **MONO**.
2. Connect the input signal to channel one's input jack.
3. Connect the speaker load to the two red terminals of each channel. Confirm the (+) terminal of the speaker to one and the (-) terminal to channel two.
4. **DO NOT USE** the black terminals of either channel.
5. Assure the speaker impedance is 4 ohms or above.
6. Adjust output using the CHANNEL ONE control and set CHANNEL TWO level to "0".

Rear Panel Connections



Front Panel and Rear Panel Controls



1. POWER SWITCH

To turn the amplifier ON or OFF, press the upper or lower portion of this rocker switch.

2. POWER INDICATING LED

This LED indicates power is turned ON.

3. LEVEL CONTROLS

Each channel has a separate low-noise 41 click detent rotary level control. Rotate controls clockwise to increase level.

4. SIGNAL STATUS INDICATORS

Two green LED indicators are normally off with no signal present and illuminate when signal is present.

5. CLIP INDICATORS

Two red LED indicators illuminate when the input signal levels exceed 3dB above clipping. Adjust the level control to minimize clipping.

6. UNBALANCED INPUT CONNECTIONS

Unbalanced inputs connect directly to the channel one and channel two quarter inch phone jacks. These inputs take priority over the XLR input jacks.

7. BALANCED INPUT CONNECTIONS

XLR input connectors are provided for balanced input signals. Please note; Pin 1: Ground, Pin 2: High, Pin 3: Low.

8. GROUND/LIFT SWITCH

To eliminate ground loops between this amplifier and a preamplifier in certain installations, a GROUND/LIFT SWITCH is provided.

9. DUAL/MONO SELECTOR SWITCH

Bridged mono operation is easily achieved by the supplied toggle switch. The input should be applied to channel one only and the corresponding front panel gain control is then used to set level. Refer to Bridged Mono Operation, page 4.

10. OUTPUT CONNECTIONS

Output connections are via five-way binding posts, identified as to polarity with a red and a black terminal. We suggest the use of dual banana plugs as a convenient and reliable method of hook-up. They allow rapid removal for polarity reversals. This feature is often necessary in the check out and adjustment of multilevel biamplified and triamplified sound systems. Heavy Class II wire may be used by unscrewing the large plastic portion of the output terminal and inserting the wire into the hole provided. It is **EXTREMELY IMPORTANT**, when making wire connections, that **NO** wire strand or end touches the adjacent terminal, shorting the output.

CAUTION:

Never strap the two red output terminals together (in parallel). Never connect either red output terminal to chassis ground.

11. FUSE HOLDER

The Fuse Holder contains the Primary AC Fuse. The fuse should only be replaced with one of the same type. If the fuse continues to blow out, stop replacing the fuse and refer servicing to qualified personnel.

12. AC POWER CORD

Plug the Power Cord into an AC outlet that delivers the proper voltage and current for amplifier operation.

CAUTION:

The amplifiers are a product of the most advanced technology and manufacturing techniques and are fully protected against overheating, input overload and shorted or mismatched loads. As is the case with any precision instrument, some care should be taken in the unit's operation. The following precautions should be noted and adhered to. Damage resulting from their omission is not covered under the terms of the warranty.

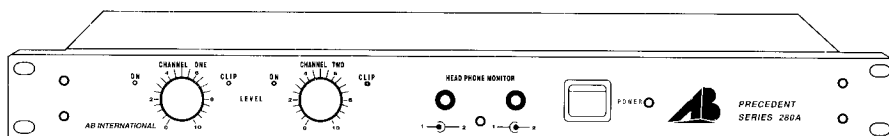
DO NOT PARALLEL THE TWO OUTPUTS OF EACH CHANNEL BY CONNECTING THEM TOGETHER OR PARALLEL THEM WITH ANY OTHER AMPLIFIER OUTPUT. NEVER CHANGE A FUSE WITH AC POWER CONNECTED. UNDER NO CIRCUMSTANCES SHOULD THE AMPLIFIER BE OPERATED WITH THE COVER REMOVED. THERE ARE NO USER SERVICEABLE COMPONENTS INSIDE. AVOID POTENTIALLY DANGEROUS SHOCK HAZARDS, KEEP THE COVER CLOSED AT ALL TIMES.

Specifications:

MODEL

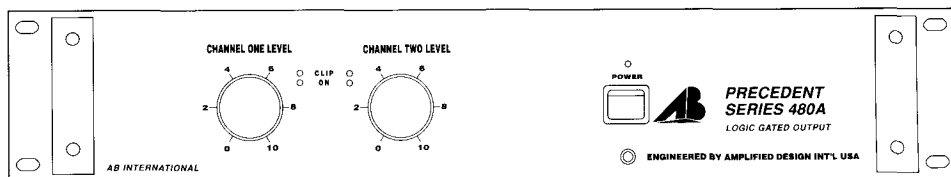
280A

Type:	Two Channel audio power amplifier
Power Output:	75 Watts per channel 8 ohms 100 Watts per channel 4 ohms 180 Watts bridged mono 8 ohms
Control and Indicators:	AC mains power switch, power on LED indicator. Individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground-lift switch.
Turn-On Delay:	3 second, Solid state activated
Damping Factor:	250:1 at 1 kHz
Freq. Response:	Plus/minus 0.5dB 20Hz to 20kHz
Distortion:	No more than 0.25%THD
Hum and Noise:	101 dB below rated output
Input Sensitivity:	1.6VRMS for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2)1/4"phone jacks (Unbalanced),(2) XLR(Balanced)
Output Connectors:	Dual 5-way binding posts
Power Input:	300W 100/240 VAC 50/60Hz
Dimensions:	1-1/4"H, 19"W, 13"D
Weight:	7.3kg



Specifications:

MODEL	480A
Type:	Two Channel audio power amplifier
Power Output:	145 Watts per channel 8 ohms 240 Watts per channel 4 ohms 400 Watts bridged mono 8 ohms
Control and Indicators:	AC mains power switch, power on LED indicator. Individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3-second solid state activated
Special Feature:	"Soft clip" speaker protection, stereophile filter caps
Damping Factor:	250:1 at 1 kHz
Freq. Response:	Plus/minus .25dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD
Hum and Noise:	101 dB
Input Sensitivity	Selectable, .775v, 1.0v, 1.5v, shipped at 1v for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2)1/4"phone jacks(Unbalanced),(2)XLR(Balanced)
Output Connectors:	Dual 5-way binding posts
Power Input :	600W 100/240 VAC 50/60Hz
Dimensions :	3- 1/2"H, 19"W, 15"D
Weight:	11 kg

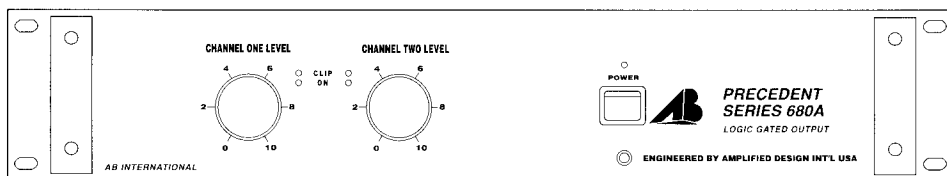


Specifications:

MODEL

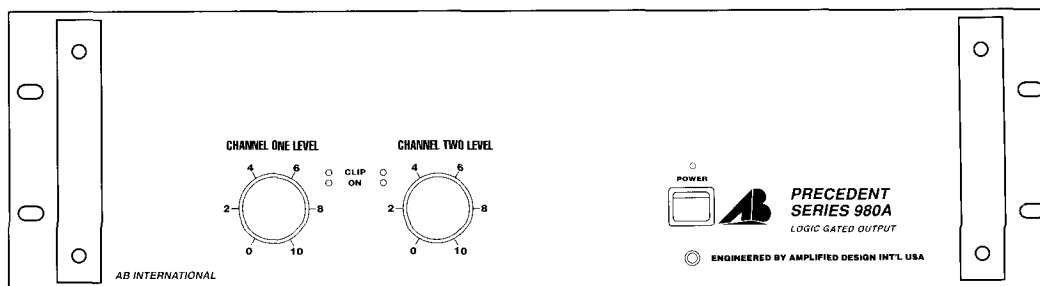
680A

Type:	Two Channel audio power amplifier
Power Output:	300 Watts per channel 8 ohms 450 Watts per channel 4 ohms 800 Watts bridged mono 8 ohms
Control and Indicators:	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Special Feature:	" Soft clip" speaker protection, Stereophile filter caps
Cooling:	Convection cooled with Internal Fan assist.
Damping Factor:	500:1 at 1 kHz
Freq. Response:	Plus/minus .25dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD
Hum and Noise:	101 dB
Input Sensitivity:	Selectable, .775v, 1.0v, 1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (Unbalanced), (2) XLR (Balanced)
Output Connectors:	Dual 5-way Binding posts
Power Input:	1000W 100/240 VAC 50/60Hz
Dimensions:	3 - 1/2" H, 19" W, 15" D
Weight:	13 Kg



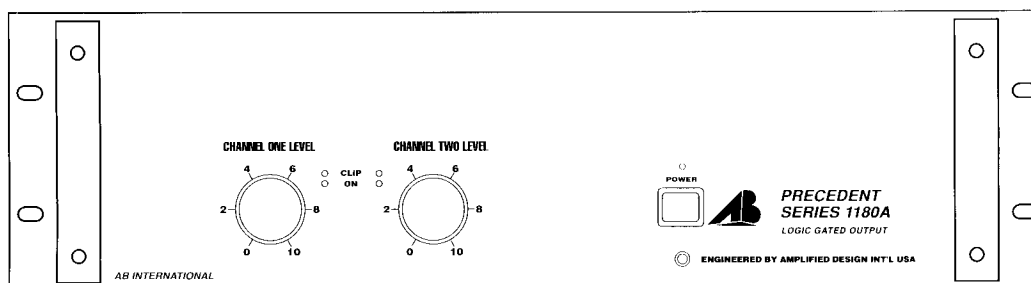
Specifications:

MODEL	980A
Type:	Two Channel audio power amplifier
Power Output:	380 Watts per channel 8 ohms 600 Watts per channel 4 ohms 1000 Watts bridged mono 8 ohms
Control and Indicators:	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Thermal Protection:	Thermal sensor activates channel shut down at 95°C
DC Protection:	DC sensor activates channel shut down if a DC condition exists.
Cooling:	High efficiency, convection cooled with "Venturi Style" fan assist (Option) providing utilizing massive heat sink extrusions
Damping Factor:	1000:1 at 1 kHz
Freq. Response:	Plus/minus .25dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD
Hum and Noise:	110dB
Input Sensitivity:	Selectable, .775v, 1.0v, 1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (Unbalanced), (2) XLR (Balanced)
Output Connectors:	Dual 5-way binding posts
Power Input:	1200W 100/240 VAC 50/60Hz
Dimensions:	5 - 1/4 "H, 19" W, 13 "D
Weight:	16 Kg



Specifications:

MODEL	1180A
Type:	Two Channel audio power amplifier
Power Output:	550 Watts per channel 8 ohms 900 Watts per channel 4 ohms 1400 Watts bridged mono 8 ohms
Control and Indicators:	AC mains power switch, power on LED indicator. Each channel has individual level controls, signal/clip indicators, balanced/unbalanced inputs. Ground lift switch.
Turn-On Delay:	3 second, solid state activated
Thermal Protection :	Thermal sensor activates channel shut down at 95°C
DC Protection :	DC sensor activates channel shut down if a DC condition exists.
Cooling:	High efficiency, convection cooled with "Venturi Style" fan assist (Option) providing utilizing massive heat sink extrusions
Damping Factor:	1000:1 at 1 kHz
Freq. Response:	Plus/minus .25dB 20Hz to 20kHz
Distortion:	No more than 0.1%THD
Hum and Noise:	110dB
Input Sensitivity:	Selectable, .775v, 1.0v, 1.5v, shipped at 1.0v for rated output
Input Impedance:	15k ohms nominal, Balanced and Unbalanced inputs
Input Connectors:	(2) 1/4" phone jacks (Unbalanced), (2) XLR (Balanced)
Output Connectors:	Dual 5-way binding posts
Power Input:	1700W 100/240 VAC 50/60Hz
Dimensions:	5' 5-1/4" H, 19" W, 13" D
Weight:	20 Kg



AB International

LIMITED WARRANTY

All AB International electronic components receive careful inspection and thorough testing prior to shipment from the factory and are warranted to the original purchaser, to be free from defects in material and workmanship and to meet or exceed all performance specifications applicable at time of manufacture. AB International will provide, without charge, necessary parts and labor to correct operation for a period of 36 months from date of original purchase provided that the defective system is returned, freight prepaid to such location as may be specified by AB International. The warranty coverage of any AB International product is contingent upon its purchase from an authorized AB International dealer. The AB International warranty is nontransferable.

Warranty coverage will not be extended to any AB International product on which the serial number has been removed or defaced or on which repair has been attempted by any person or agency not authorized by Amplified Design International or if in the sole opinion of AB International the system shows evidence of tampering, abnormal or unreasonable abuse, accident or operation without regard for the restrictions specified in the instructions which accompany the system. AB International further reserves the right to readjust prices or other design parameters and specifications without incurring the responsibility for modifying previously purchased systems.

AB International specifically excludes from this warranty any responsibility for consequential damages.

To obtain warranty service, you must take the product, or deliver the product prepaid, to an authorized AB International. Customers outside the U.S.A. please contact your authorized dealer or distributor.

This warranty does not cover any damage due to accident, misuse, abuse or negligence. This warranty is valid only in the United States and Puerto Rico.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. AB INTERNATIONAL SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

For the names of you're nearest AB International service facility, contact: AB International (916) 652-9214, Fax (916) 652-9218.

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