



Operation Manual

Digital SR Amplifier **DSA-100D/DV**



interM

Welcome

A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!



WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

*WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING-WATER AND MOISTURE: Unit should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

*CLASS 2 WIRING (Adjacent to speaker terminal): The speaker output of this apparatus can exceed 10 Watts and could be a shock injury. Connection to speakers should be performed by a skilled person.

*Do not install this equipment in a confined space such as a book case or similar unit.

*This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

*This apparatus shall be connected to a mains socket outlet with a protective earthing connection.

*It has had to be easy to disconnect the device. To disconnect the device from power, separate AC input cable from inlet or unplug the AC Cord.

CAUTION

*These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

NOTE

*This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.

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Unpacking

Although your DSA-100D/DV is neither complicated nor difficult to operate, we recommend you take a few minutes to read this brief manual and familiarize yourself with the important information regarding product features, setup and operation.

As with most electronic devices, we strongly recommend you to retain the original packaging. In the unlikely event the product must be returned for servicing, the original packaging (or reasonable equivalent) is required.

Installation

Environment

Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



Features

- Compact Design

The DSA Series is a amplifier 100 watts x 2 of Power that is housed in half rack 1 RU compact chassis. Ideal for applications where high power stereo amplification is required such as board room and class rooms.

- Professional Grade D-Class Amplifier and Switch Mode Power Supply (SMPS)

Class D amplifier offer improved total harmonic distortion with an increased signal to noise ratio of professional grade sound quality. SMPS creates a high efficiency amplifier offering reduced power consumption and low heat dissipation.

- APD (Auto Power Down)

The amplifiers automatically enter into a standby mode after 30 min when unit is not in active, it takes a advantage of reducing power consumption.

The unit returns to operating status within 3 sec upon signal detection.

- ENERGY STAR - Low Power Compsumtion in STAND BY mode



In STAND BY mode, the unit only takes a less than 1W of electric power compsumtion which complies with ENERGY STAR® standards.

- GAIN selection switch

Selectable proper input sensitivity of amplifier either +4dBu (1.2283V) or -20dBu (77.5mV)

- High Pass Filter (120Hz)

Built in High Pass Filter to protect the speaker against unwanted low frequency.

- Bridge-Mono Mode

Bridging allows power to be output at 200 watts.

- Power Mode Selection Switch

There are 3 selectable power mode switch (ON/REMOTE/OFF). When switch is selected as REMOTE, the amplifiers can be remotely power ON/OFF control.

- Remote Power Connector

The remote power allows the amplifier to be turned on or off from a distance or other device via dry contact closure.

- Front siganal and protection LED indicators

LED indicators for POWER, STAND BY, PROTECTION, SIGNAL and CLIP on the front panel give a easy verification of operation status.

- Advanced Protection Circuitry

Advanced protection circuitry guards against overheating, shorted outputs, DC output, overloads.

- Balanced Input

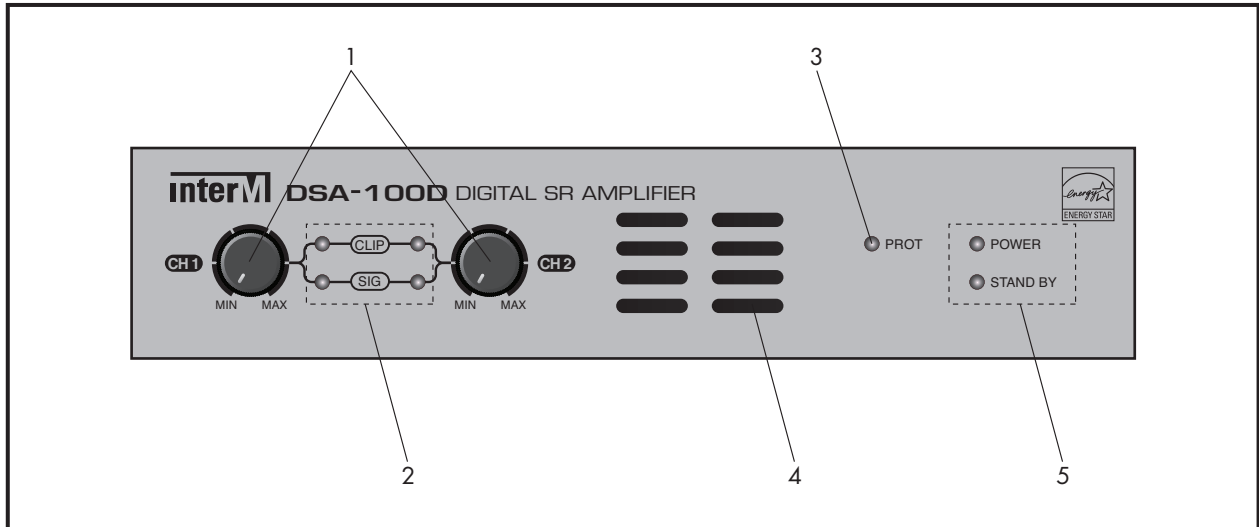
This connection is used to ensure the lowest noise operation which eliminates the common noise from the cable.

- VCA (Voltage Control Amplifier) Control (Only DSA-100DV)

Voltage-controlled amplifier is an electronic amplifier that varies its gain depending on a control voltage. These two terminals provide connection for an external potentiometer. When the potentiometer is connected, it allows for remote control of the master volume level.

Note that individual input volume control positions limit the maximum output level adjustable with the remote volume control.

Front Panel



1. VOLUME CONTROL

Turn the volume controls clockwise to increase gain and counterclockwise to decrease gain against each channel.

2. OUTPUT SIGNAL LEVEL INDICATORS

The LEDs indicate the amplifier's output signal levels.

- SIGNAL LED illuminates green when signal is present at the input more than -25dB.
- CLIP LED illuminates red when there are excessive signal levels.

※ NOTE : The Clipping may damage the speakers and amplifier so when CLIP LED is on please lower the volume level.

3. PROTECTION MODE INDICATOR

The amplifier features several types of protection circuitry to prevent damage during power-up or fault conditions such as overheat, overload and a detection of DC output. PROTECTION LED illuminates when any of these faults is detected. The output relays will disconnect the speaker loads when the protection circuitry detects a fault condition. Once the specific fault has been corrected, the PROTECTION LED will be turned off and The unit will be working normally.

Protect LEDs will illuminate for 2 to 3 sec during power-up process then after 2 to 3 sec PROTECTION LED will be turned off and stay as normal condition to use.

4. COOLING VENTS

Air flow is front to back. DO NOT block front or rear air vents.

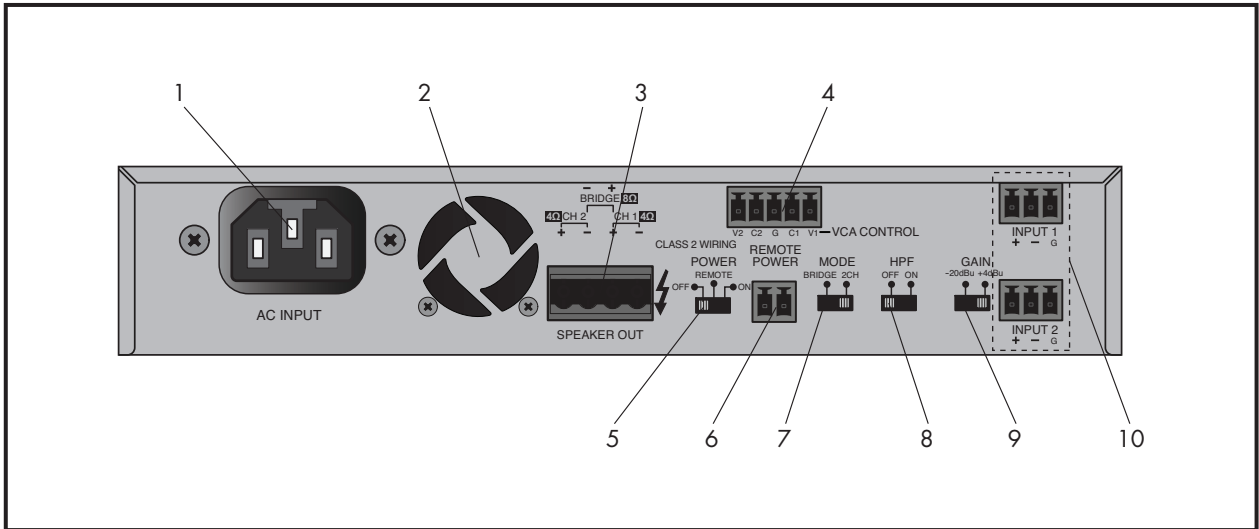
5. POWER LED INDICATOR

- POWER LED illuminates green when the rear power selection switch is selected as ON or the remote power contact is triggered when the rear power selection switch is selected as REMOTE.
The unit turns into APD (Auto Power Down) mode, the power LED will turn off.
- STAND BY LED illuminates yellow when the rear power selection switch is selected as OFF or the remote power contact is not triggered when the rear power selection switch is selected as REMOTE.

● APD (Auto Power Down) function

- ① when the rear power selection switch is selected as ON or
 - ② when the rear power selection switch is selected as REMOTE and the remote power contact is not triggered, it will activate the APD mode.
- POWER LED illuminates green until APD mode is on under that circumstance.
 - The amplifiers automatically enter into a standby mode after 30 min of inactivity then STANBY LED will illuminate yellow which helps to minimize the electric power consumption.
 - The unit returns to operating status within 3 sec upon signal over -30dB detection, STAND BYE LED will be off and POWER LED will illuminate green.

Rear Panel



1. AC INLET

It accepts a standard IEC mains cable, provided.

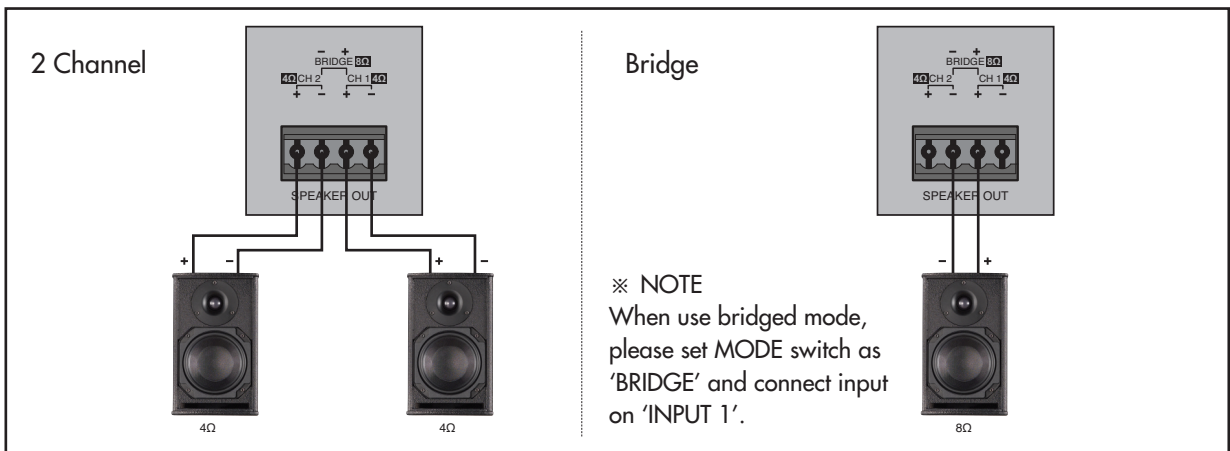
2. COOLING VENTS

Air flow is front to back. DO NOT block front or rear air vents.

3. SPEAKER OUTPUT TERMINAL

Operation Mode	Minimum Speaker Impedance
2 Channel	4Ω
Bridged	8Ω

Speaker connection of CH1/CH2 or Bridge mode. (see below picture)



Bridge connection: wire the "hot"/positive lead to the "+" terminal of CH1, the "common"/negative lead to the "-" terminal of CH2.

※ NOTE : Before connecting speakers to the unit, be sure to disconnect the AC power cable. Make certain that the total impedance is not less than the rated impedance indicated.
Do not put the speaker cable close to input signal cable.

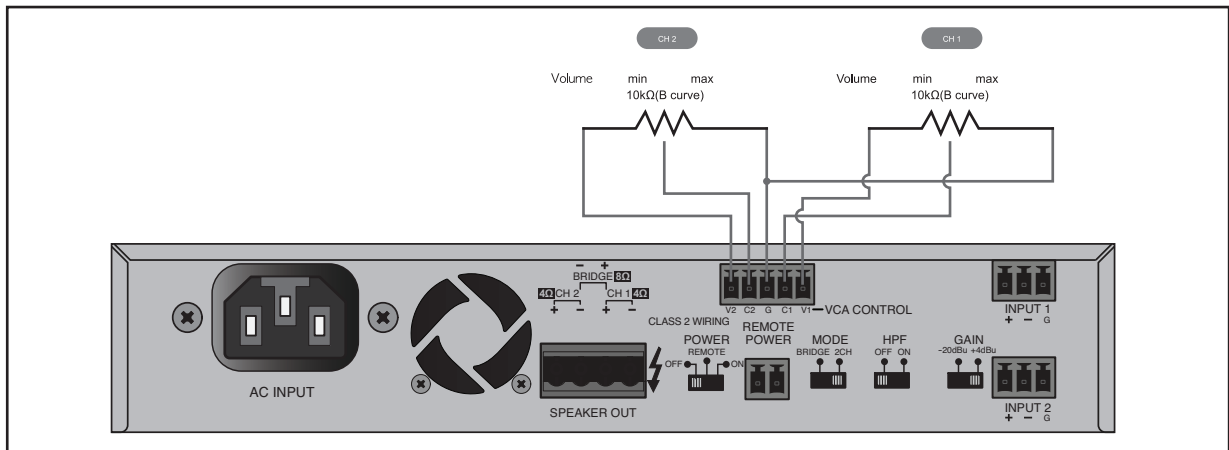
4. VCA (VOLTAGE CONTROLLED AMPLIFIER) TERMINAL (Only DSA-100DV)

When the potentiometer is connected, it allows for remote control of the master volume level.

CH1 remote volume : connect into "V1, C1, G" with 10k Ω volume (B curve type)

CH2 remote volume : connect into "V2, C2, G" with 10k Ω volume (B curve type)

Connections of VCA control terminal. (see below picture)



* VCA (VOLTAGE CONTROL AMPLIFIER)

Voltage-controlled amplifier is an electronic amplifier that varies its gain depending on a control voltage. These two terminals provide connection for an external potentiometer. When the potentiometer is connected, it allows for remote control of the master volume level without sound distortion.

※ NOTE : Note that individual input volume control positions limit the maximum output level adjustable with the remote volume control
If VCA control unit is separated from the unit, it goes back to level of front panel volume control so do not separate the VCA control unit while it is in use.

5. POWER MODE SELECTION SWITCH

- There are 3 selectable power mode switch. (ON/REMOTE/OFF)
- Switches to ON : Power ON
- Switches to OFF : Power OFF
- Switches to REMOTE and Remote power connector is triggered : Power ON
- Switch to REMOTE and Remote power connector is not triggered : Power OFF

6. REMOTE POWER CONNECTOR

Power Mode switch is

selects as REMOTE and Remote power connector is triggered : Power ON

selects as REMOTE and Remote power connector is not triggered : Power OFF

7. MODE SWITCH

Mode selection switch for either CH1/CH2 stereo or BRIDGE mono mode

(1) CH1/CH2 MODE

Input signal of each channel will drive each channel independently. Input signal of CH1 drives Amp output of CH1, Input signal of CH2 drives Amp output of CH2. In this case volume can be controlled independently on both channel.

(2) BRIDGE MODE

The bridge mono mode combines both channels to create one larger mono channel.

By connecting CH1 (+) terminal and CH2 (-) terminal, The amplifier will deliver approximately twice the voltage at CH1. Please observe the minimum load specification when operating in Bridge mode.

- ※ NOTE : In BRIDGE mode, Do not use the CH2 input because only CH1 input is active and put the CH2 volume control to minimum position which only volume will controlled by CH1 volume control.
In BRIDGE mode the speaker impedance load must be atleast 8Ω .
- ※ NOTE : When connected to the OPT-100D, set the mode switch to "2CH".
(The OPT-100D DO NOT support the bridged mode.)

8. HIGH PASS FILTER SWITCH (ON/OFF)

Select switch position to ON, it will activate 120Hz -12dB / OCT High Pass Filter.

- ※ NOTE : When connected to the OPT-100D, set the HPF switch to "ON".
- ※ NOTE : High Pass Filter is to increase sound clarity and improve output sound.

9. GAIN SELECTION SWITCH

Select proper input sensitivity of amplifier either +4dBu (1.2283V) or -20dBu (77.5mV)

- ※ NOTE : The -20dBu is designed for low level device of audio source. If you connect the a general audio device (such as CD, TUNER, DECK ect) and set up the -20dBu together, the quality of sound may be deteriorated.

10. INPUT TERMINAL

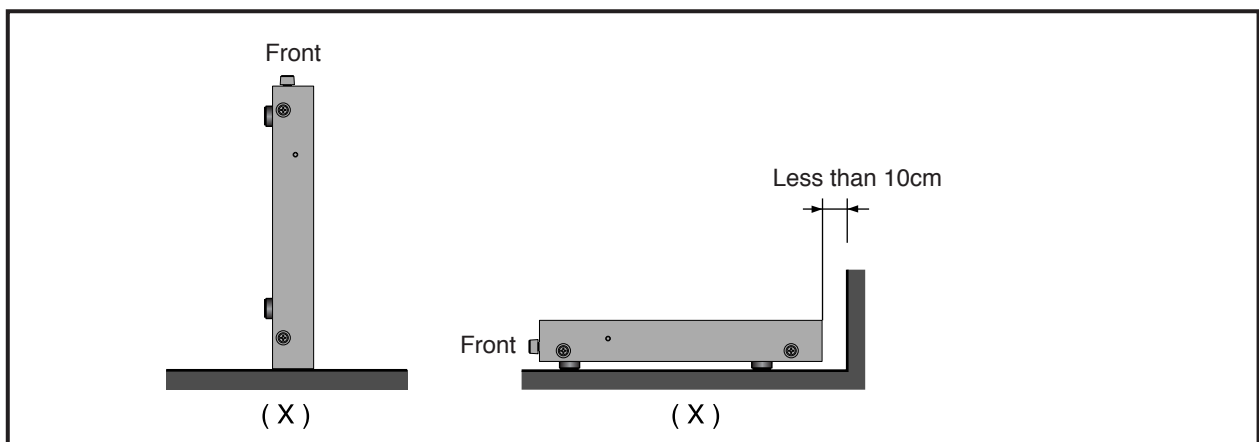
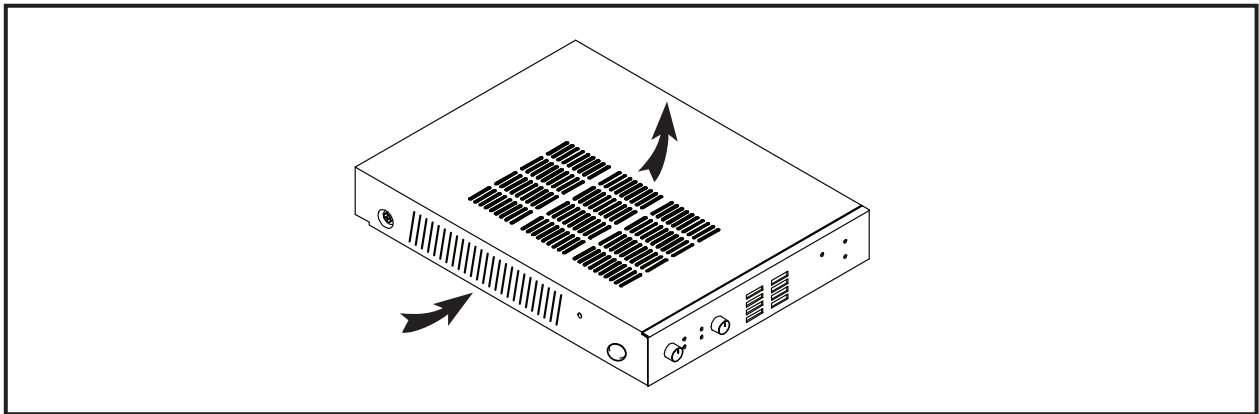
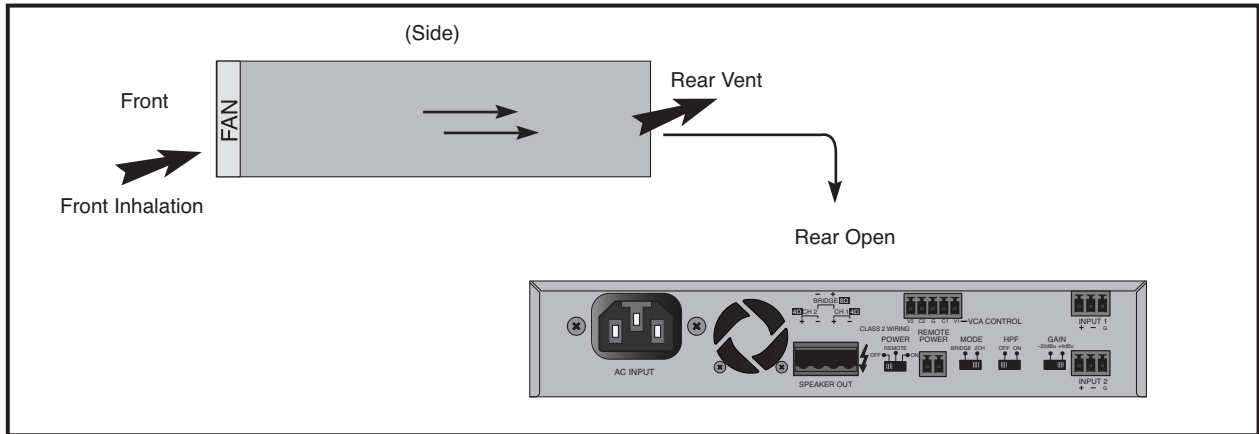
These inputs are balanced and configured as follows: + (signal plus), - (signal minus), GND (ground)

- ※ NOTE : Connect or disconnect input terminal after unplugging the power cord.

Installation of Caution

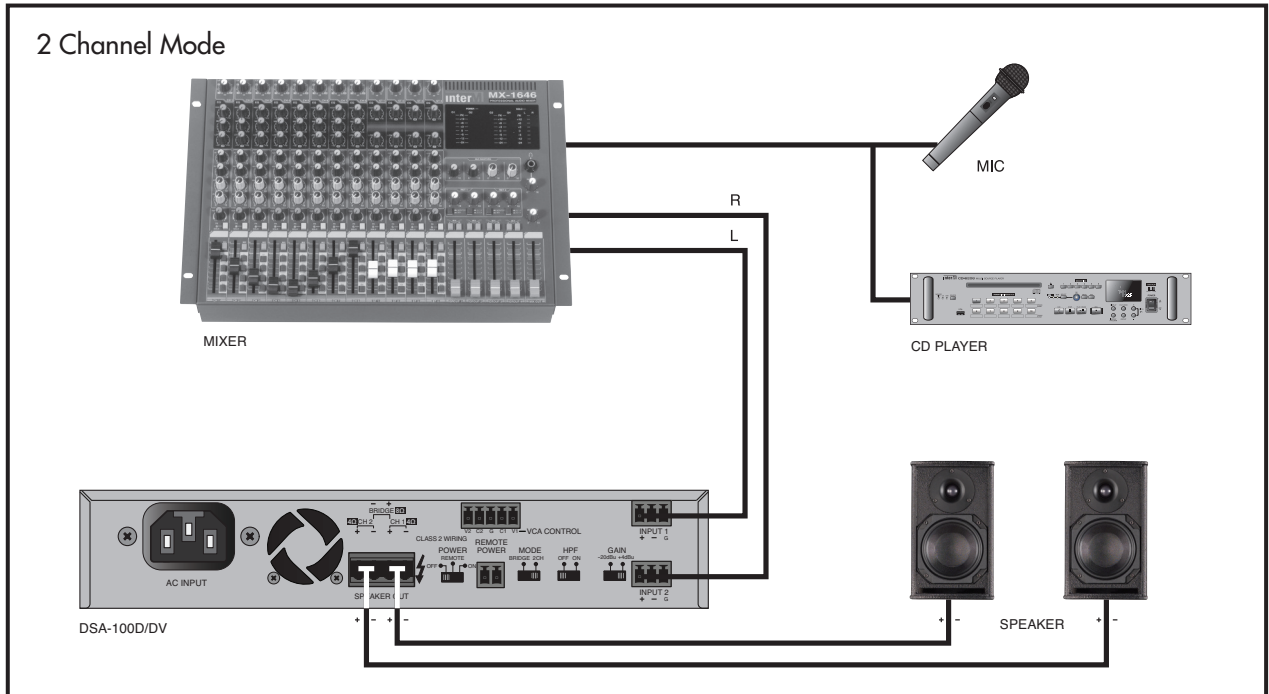
The Cooling Vents are provided for ventilation and to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. The unit should not be placed in a built-in installation unless proper ventilation is provided.

Maintain a minimum distance of 2 inch (50 mm) around the front, the rear, and the sides of the unit for

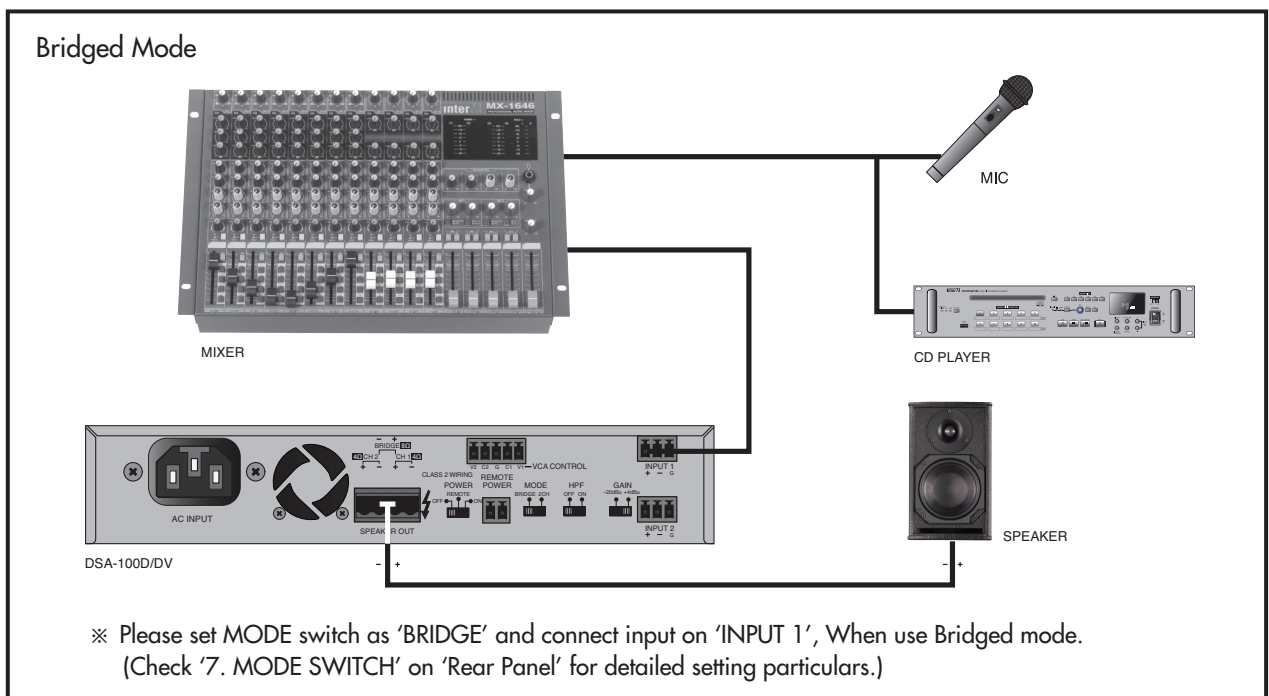


Applications

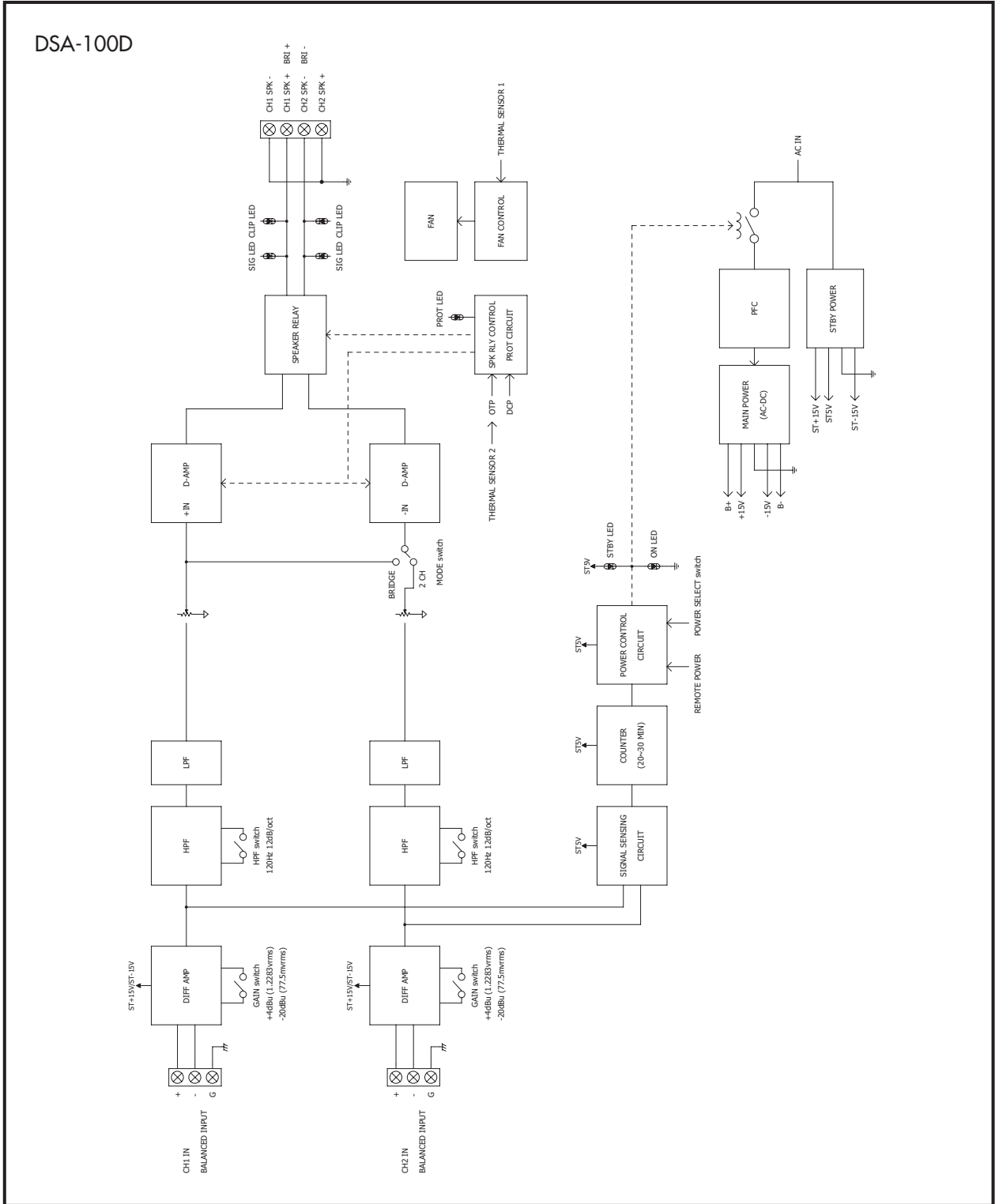
Stereo Installation



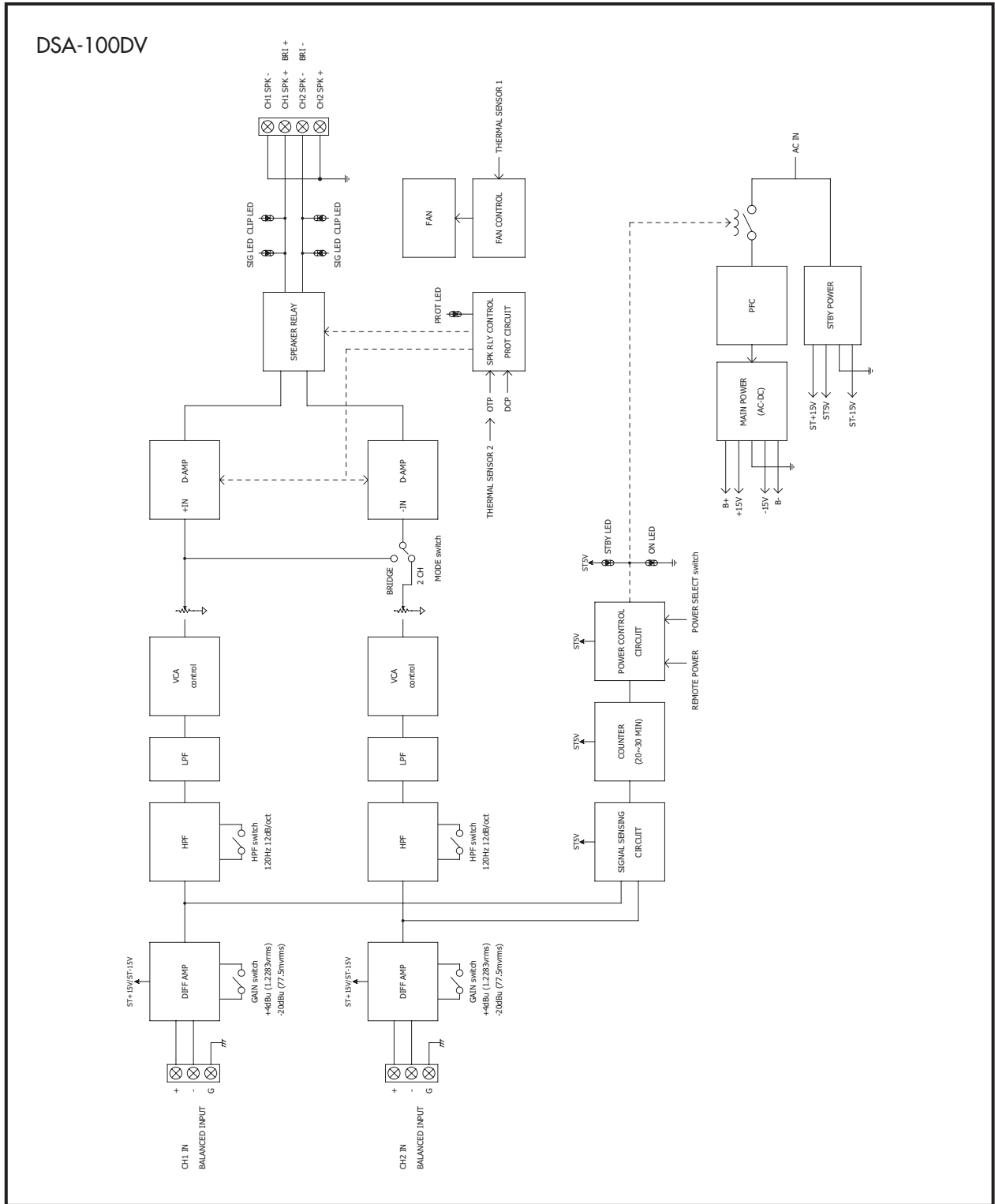
Bridged Mono Installation



Block Diagram



Block Diagram

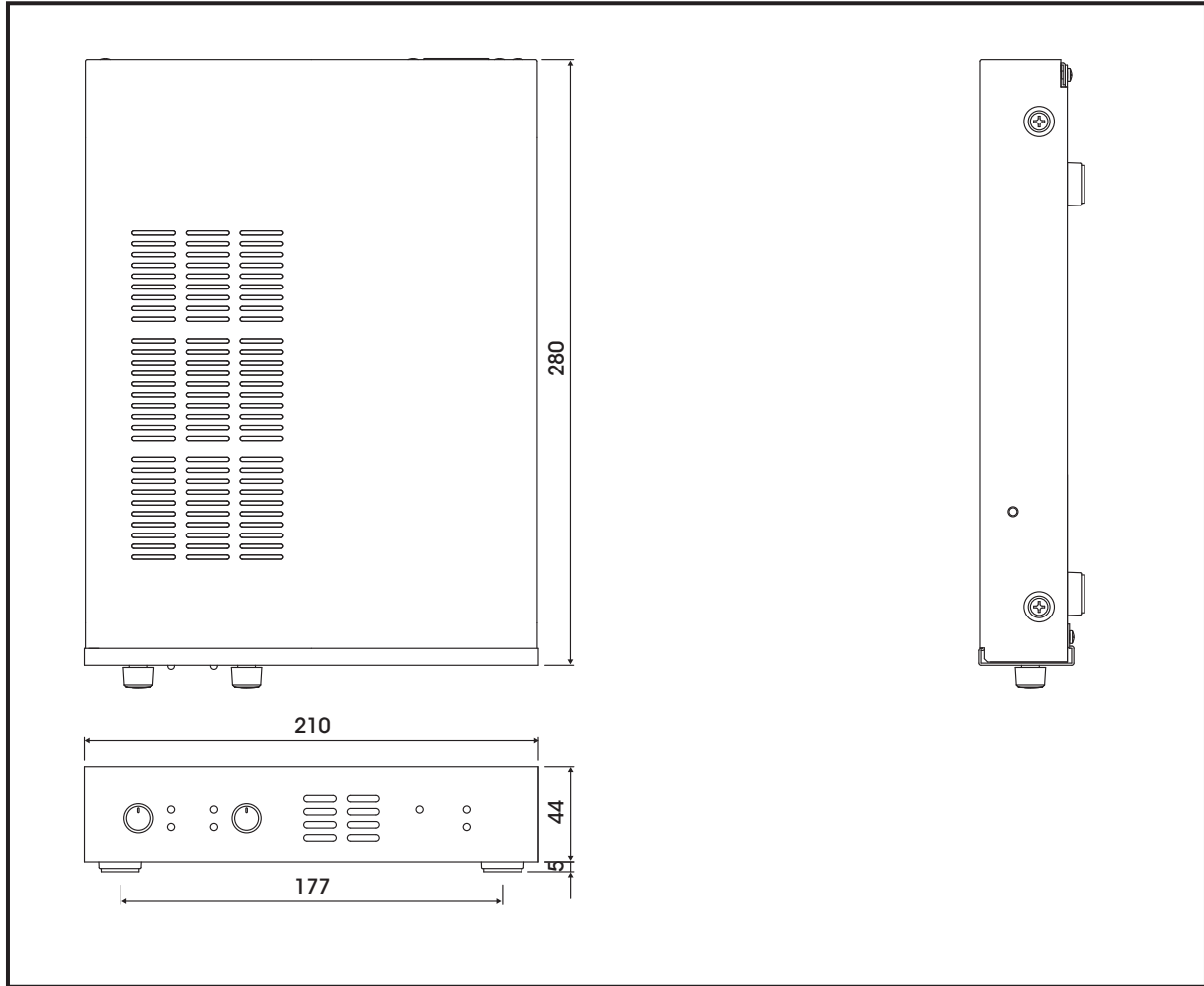


Specifications

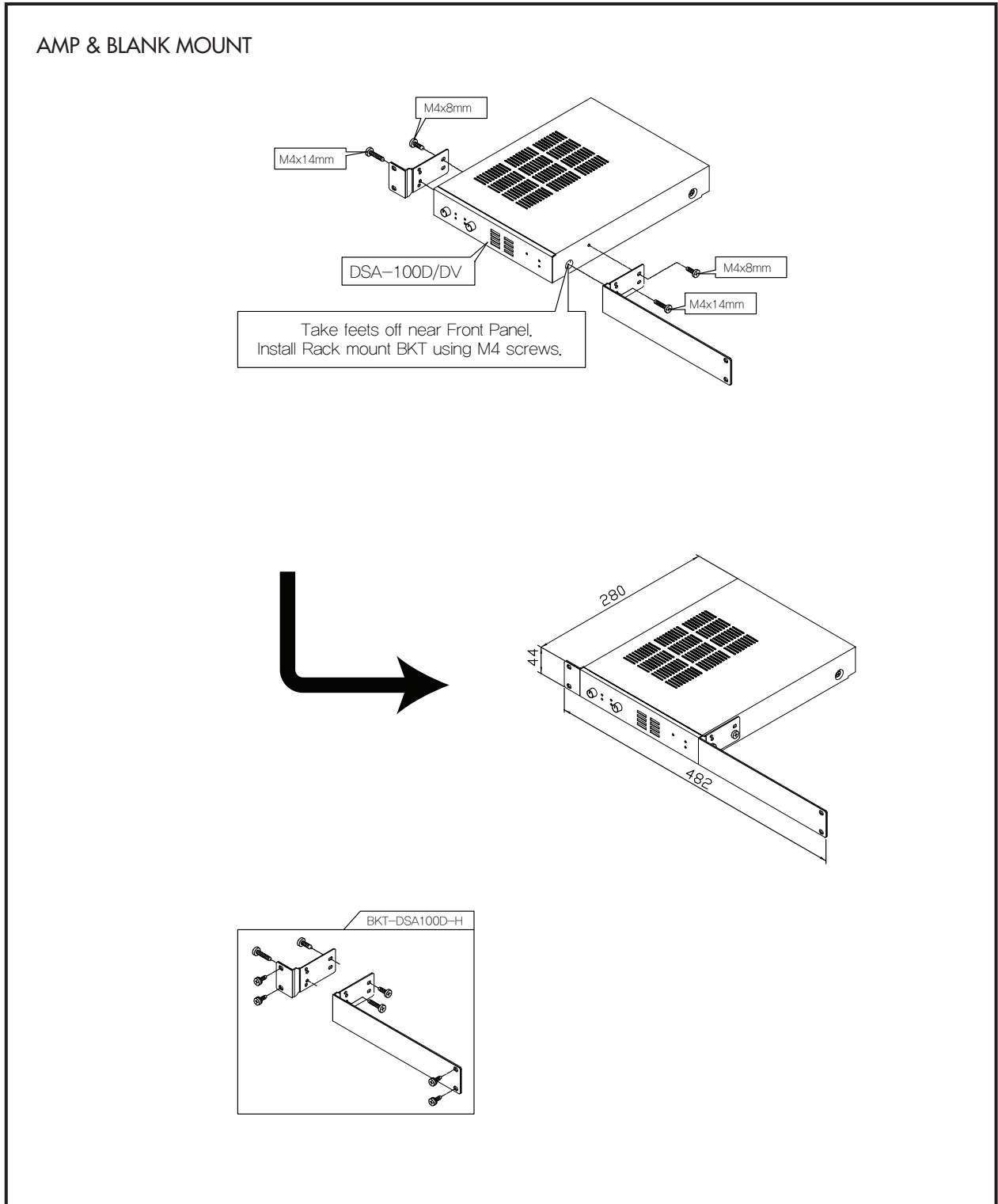
				DSA-100D	DSA-100DV
Rated Output Power	20kHz LPF, AUX-0025. @ 1kHz. @ THD + N = 1%.	2 Channel	4Ω	More than 100W	
			8Ω	More than 55W	
		Bridged	8Ω	More than 200W	
Peak Power	Bridged 4Ω 1kHz 10cycle			280W	
Input Sensitivity	20kHz LPF, AUX-0025. @ 1kHz.	GAIN SWITCH +4dBu(1.2283V)		+4dBu± 2dB	
		GAIN SWITCH -20dBu(77.5mV)		-20dBu± 2dB	
Damping Factor	1KHz, Rated Output Power @ 8Ω			110	
THD + N	20kHz LPF, AUX-0025. @ 1kHz. @ 10dB Below Rated Output Power	2 Channel 10dB Below	4Ω 1kHz	0.02%	0.03%
		2 Channel 10dB Below	8Ω 1kHz	0.02%	0.03%
		Bridged 10dB Below	8Ω 1kHz	0.02%	0.03%
S/N	20kHz LPF, AUX-0025, A-WTD.			93dB	92dB
Frequency Response	INPUT 1.2283 vrms. VOLUME Adjust.	2 Channel Output 1W / 8Ω ±1dB		20Hz~20kHz	
HPF	INPUT 1.2283 vrms. VOLUME Adjust.	2 Channel Output 1W / 4Ω	120Hz	-3dB ± 2dB (-12dB / oct)	
Channel Separation	20kHz LPF, AUX-0025. @ 3dB Below Rated Output Power	Channel Output 3dB Below	1kHz	-65dB	
Operation Temperature / Humidity				-10°C ~ +40°C / 0% ~ 90%	
Power Source				100-240VAC, 50/60Hz	
Power Consumption (1/8 Rated Output Power @4Ω)				45W	
STAND BY Power Consumption				Less than 1W	
Weight(set)				2.5kg/5.5lb	
Dimensions(set)				210(W) x 44(H) x 280(D)mm 8.3(W) x 1.73(H) x 11(D)in	

* Specifications and design subject to change without notice.

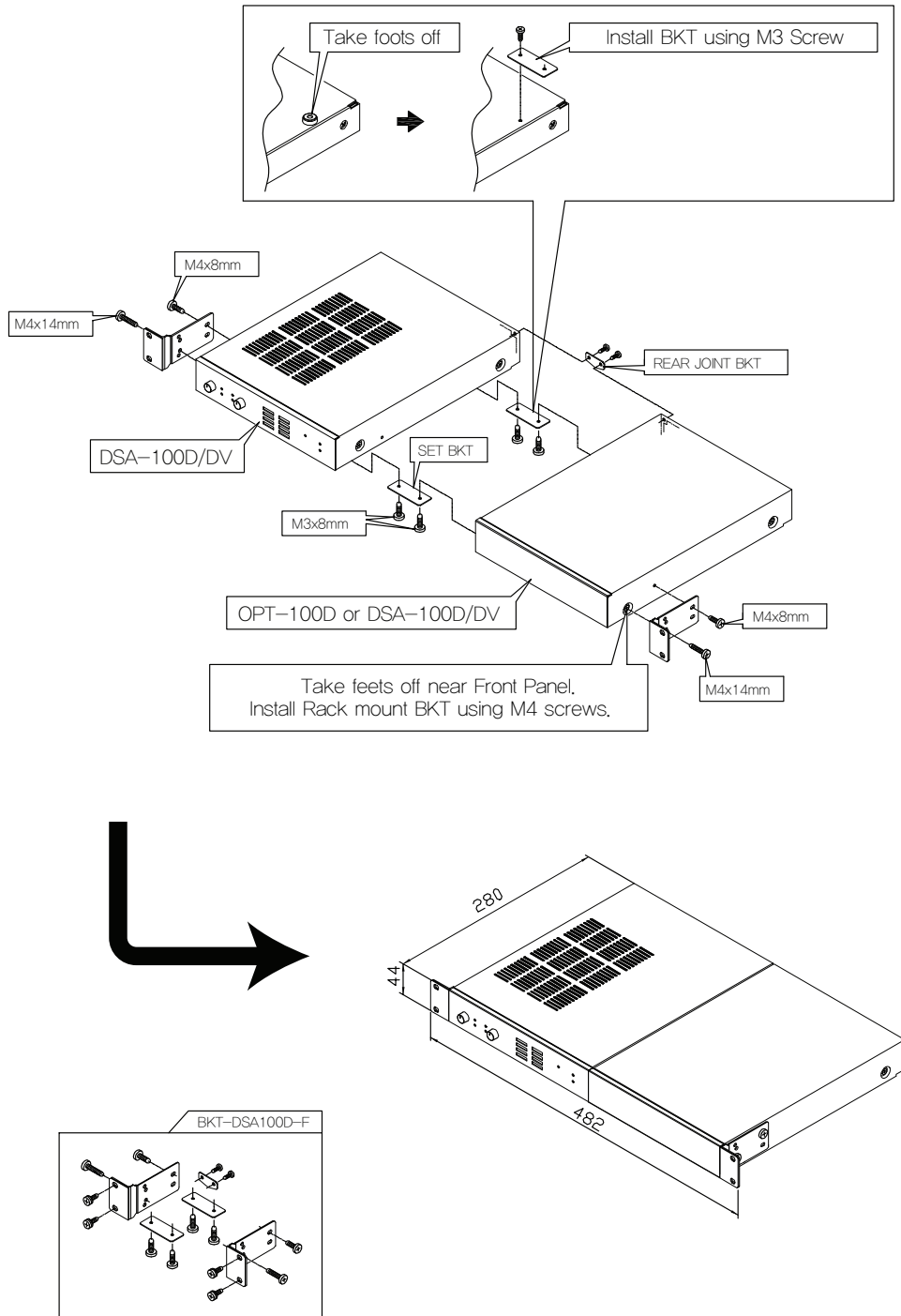
※ DIMENSIONS



How to install the rack



AMP & OPT RACK MOUNT



Service

Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations, contact Inter-M directly or the authorized Inter-M Distributor for your specific country or region.

interM



Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products, as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company that is truly international in scope, with factories and offices in Korea and China, and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe, Inter-M is well-poised for further growth and expansion.

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July 2013 133444