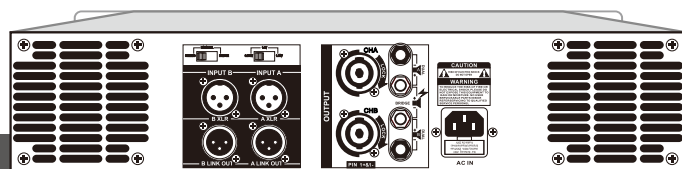


# PROFESSIONAL POWER AMPLIFIER

## USER MANUAL



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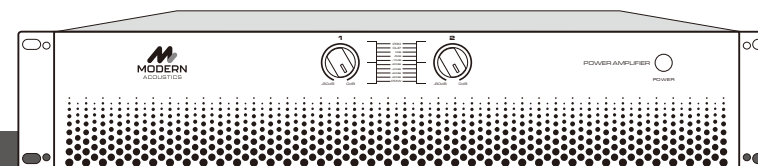


## Professional Power Amplifier

### USER MANUAL

#### USER MANUAL

Thank you for purchasing a power amplifier. In order to make full use of the product's functions and ensure smooth operation, please read this instruction manual carefully before use.



In order to maximize the performance of this power amplifier and extend the normal life, please read this manual carefully before use.

## PRECAUTIONS

Please read the following carefully before using. Be sure to follow these instructions.

The following precautions can prevent the risk of injury to users and other things and prevent property damage, and help users use this product reasonably and safely. Be

After reading this manual, please keep this manual in a safe place for future reference.

- The company is not responsible for personal injury and product damage or data loss or damage caused by improper use or unauthorized modification of this product.
- This product is suitable for professional audio system. For example, it is suitable for large-scale stage performances, conference halls, high-level clubs, bars, KTV nightclubs, entertainment events, etc.

## Power/power cable

- Only can use the rated voltage specified by this equipment. The required voltage is printed on the nameplate of the device.
- Do not put the power cable near a heat source such as a heater or radiator. Do not bend or damage the power cord excessively. Do not press heavy objects on it. Do not put it on the surface that may be stepped on or may be crushed.
- Be sure to connect to a suitable power outlet with a protective earth connection. Improper grounding may cause electric shock

## Do not disassemble

- Do not disassemble or modify this product. This device does not contain any user-serviceable parts. Failure to do so may result in fire, electric shock, or malfunction. If you find any improper operation, please stop using it immediately and have the qualified technicians perform maintenance and repair.

## Warning about moisture

- Do not expose the device to rain, use it near water or in damp or wet conditions, or place a container containing liquid on it, as this may cause liquid to splash into any openings. If any liquid such as water seeps into the unit, immediately turn off the power and unplug the power cord from the AC outlet. Then, please have qualified maintenance personnel of the company to overhaul the equipment.
- Do not plug or unplug the power cord with wet hands.

## Connection

- Turn off the power switches of all devices before connecting the device to other devices. Turn all volume to a minimum before turning the power switch on or off for all devices.
- Only use the speaker cable when connecting the speakers to the speaker jack. Using other types of cables may result in fire.
- Do not put the device in a place where it may be exposed to corrosive gases or salty air. Failure to do so may result in malfunction of the equipment.

## SPECIFICATIONS

### Performance Specifications

	SA-450	SA-600	SA-1000
Sensitivity	0.775Vrms or 1.0Vrms or 1.4Vrms	0.775Vrms or 1.0Vrms or 1.4Vrms	0.775Vrms or 1.0Vrms or 1.4Vrms
Frequency Response	20HZ-20KHZ	20HZ-20KHZ	20HZ-20KHZ
Signal to Noise Ratio (rated dBr to full rated 8Ω power output; A-Weighted)	99dB	99dB	99dB
Total Harmonic Distortion (THD)	<0.5%	<0.5%	<0.5%
Intermodulation Distortion (60Hz and 7 kHz at 4:1) from full rated output to -30dB	=/<0.35%	=/<0.35%	=/<0.35%
Damping Factor (8Ω,10Hz-400Hz)	>300@ 8Ω	>300@ 8Ω	>300@ 8Ω
Crosstalk (below rated 8Ω power)	at 1K -75dB	at 1K -75dB	at 1K -75dB

### Physical Specifications

	SA-450	SA-600	SA-1000
Width	550mm	550mm	550mm
Height	140mm	140mm	140mm
Depth	560mm	560mm	560mm
Net Weight	12kg	13.2kg	15.1kg
Shipping Weight	13.9kg	15.1kg	17kg

### Power Matrix

	SA-450	SA-600	SA-1000
Channels	2	2	2
2Ω Dual	550W	700W	1600W
4Ω Dual	450W	600W	1000W
8Ω Dual	300W	400W	600W
4Ω Bridged	900W	1200W	2000W
8Ω Bridged	600W	800W	1200W

## CONNECT THE POWER WIRE TO THE [AC IN] CONNECTOR


### PROFESSIONAL POWER AMPLIFIER AND POWER SEQUENCE

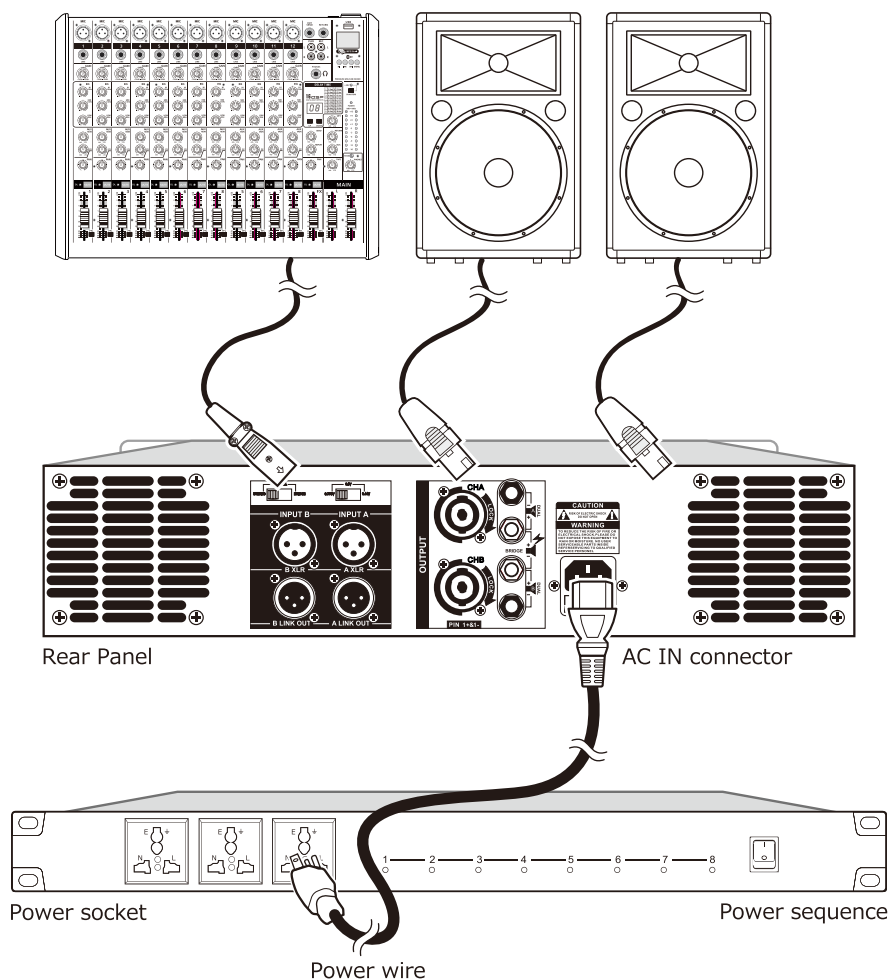
#### Connect the power wire to the power sequencer socket interface

Use 230V AC, always use a three-pin socket when using, please use the power correctly

#### ⚠ WARNING



To ensure that the speaker  does not emit loud noise, turn on the source device and then turn on the mixer and processor. Finally turn on the power amplifier. When the system is turned off, Please reverse the order.



#### When aware of any abnormal conditions:

- If the power cable is worn or damaged, the sound is suddenly interrupted during the use of the equipment or an abnormal smell or smoke is emitted. Please immediately turn off the power switch, Unplug the power plug and ask qualified service personnel.

#### Operating Carefully

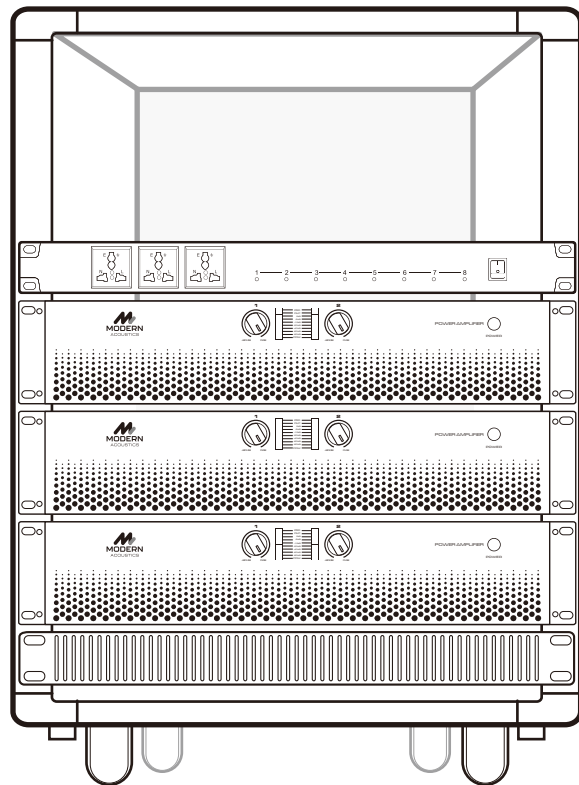
- When turning on the audio system, please turn on the device last to avoid damage to the amplifier. Also turn off the power when turning off the power.
- Condensation can occur in the device due to rapid, drastic changes in ambient temperature (for example, moving the device from one location to another, or turning the air conditioner on or off). Using this unit in the event of condensation may result in equipment damage. If there is reason to believe that condensation may have occurred, turn off the power to the unit and stop using it for a few hours until the condensation is completely dry.
- Do not insert your fingers or hands into any gaps or openings in the device (vents, ports, etc.).
- Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings (vents, ports, etc.) on the device. In this case, turn off the power switch immediately and pull it out of the AC power outlet. Then have it serviced by qualified technical service personnel.
- Do not use the amplifier or headphones at high or uncomfortable volume levels for extended periods of time as this may cause permanent hearing damage. If you experience any hearing loss or tinnitus, please see a doctor.
- Do not put your body on the device or put some heavy objects on it. Avoid excessive force when operating buttons, switches or sockets.
- Do not use this device for anything other than to drive a loudspeaker.

#### Placement position

- Be sure to unplug all the connecting cables before moving the amplifier.
- When setting up the device, make sure that the AC outlet you are using is within easy reach. If a problem or malfunction occurs, disconnect the power switch immediately and unplug it from the power outlet. Even if the power switch is turned off, there is minimal current to the product. When you are not using the product for a long time, be sure to unplug the power cord from the AC outlet.
- To avoid deformation of the operator panel or damage to internal components, do not put the amplifier in an environment where there is a lot of dust, vibration, extreme cold or heat (such as in direct sunlight, near a heater or in a car under the scorching sun).
- Do not put the amplifier in an unstable location as it may cause it to suddenly fall over.
- Do not block the ventilation holes. This unit has ventilation holes on the front/back to prevent excessive temperature inside the unit. Special care should be taken not to put the amplifier sideways or upside down. Poor ventilation can cause overheating and can damage equipment or even cause a fire.
- Do not use the amplifier near televisions, radios, stereos, mobile phones, or other electronic devices. This can cause noise in the device itself as well as in the TV or radio near the device.
- If you install the device in an EIA standard bay, read "Precautions when installing the device with the bay". Poor ventilation can cause overheating and can damage equipment, cause malfunctions, and even cause a fire.
- Thank you for purchasing a power amplifier. In order to maximize the performance of this power amplifier and extend the normal life, please read this manual carefully before use.

## Precautions when installing the device with the bracket

- This unit can operate normally within the ambient temperature range of 0-40 °C. If you only install the device in an EIA standard bay, you can install multiple devices without leaving space between the devices. If this unit is installed in an EIA standard bay together with other types of equipment, the heat generated by other equipment may cause the internal temperature of the rack to rise, resulting in the unit not working properly. To ensure that no heat builds up inside the unit, the following conditions must be observed when installing it in the bracket.
- If this unit is installed in a bracket together with other heat-generating equipment (such as power amplifiers manufactured by other companies), a space of 1U or more must be left between the unit and other equipment. Ventilation panels should also be installed in this space or kept open to ensure adequate ventilation.
- Keep the back of the bracket open and leave a 10 cm or greater distance between the bracket and the wall or ceiling to ensure adequate ventilation. If the back of the bracket cannot be left open, a commercially available fan assembly or forced air circulation system must be installed on the bracket. If the fan assembly is already installed, closing the back of the bracket may result in better cooling. For more information, see the operating instructions that came with the bay system or fan assembly.
- The terminal marked with the symbol "⚡" is a warning of dangerous, and the external wires connected to these terminals need to be installed by the electrician, or it's the warning for use a ready-made lead or flexible cord.



### ⚠ Cabinet installation

(Install the corresponding product according to the maximum tolerance of the cabinet)

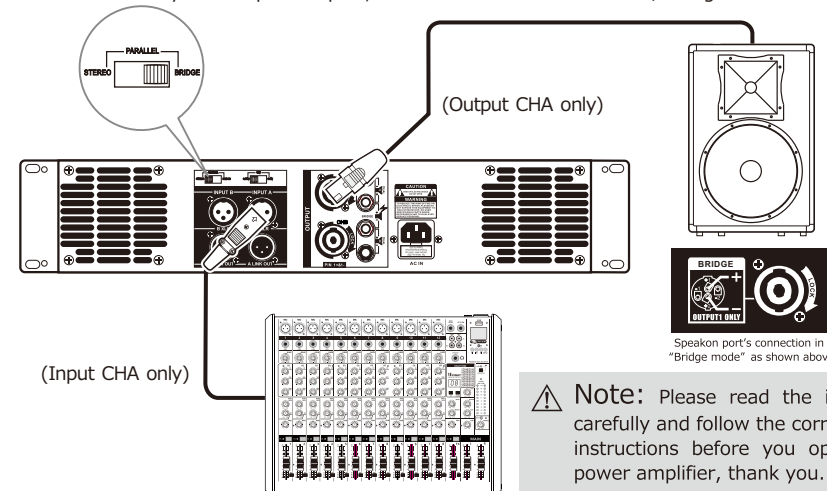
## APPLICATIONS

### POWER AMPLIFIER MODE INSTALLATION

#### BRIDGE MODE

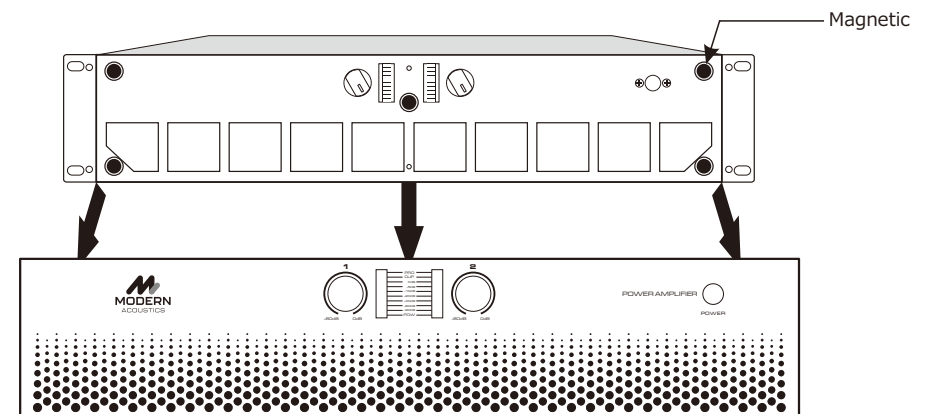
Bridge mode can get more power by single channel, which is twice as many as single channel. And also used according to the actual situation.

1. Confirm it set by bridge mode already, as shown "BRIDGE".
2. Connect the speakers through the speakon, before connecting, please pay attention to the internal connection way of the speakon port, is different from Stereo mode / Bridge mode.



### DETACHABLE PANEL

After a long period of use or dusty environment, the air inlet of the amplifier will be accumulated dust, it will be effected the heat radiation, or caused product failure, if not clean in time. EA series power amplifier has magnetic detachable panel, it can be cleaned easily by hand, no need tools.



Detachable Panel



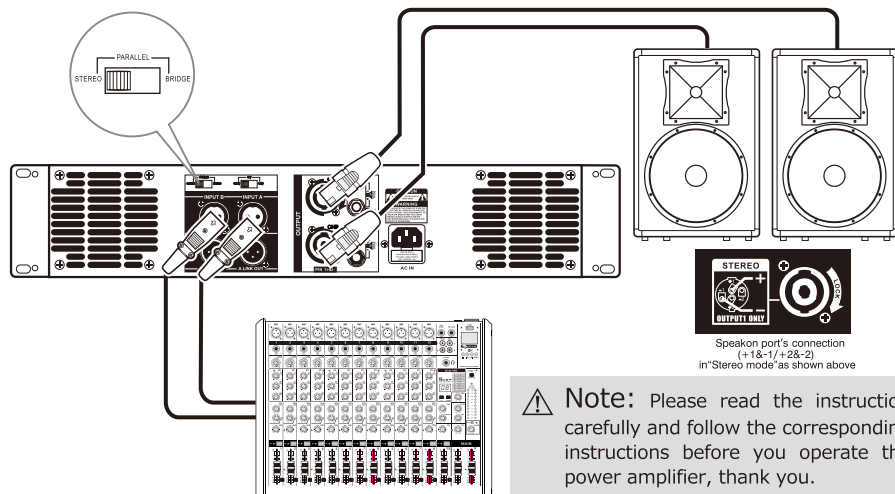
## APPLICATIONS

### POWER AMPLIFIER MODE INSTALLATION

#### STEREO MODE

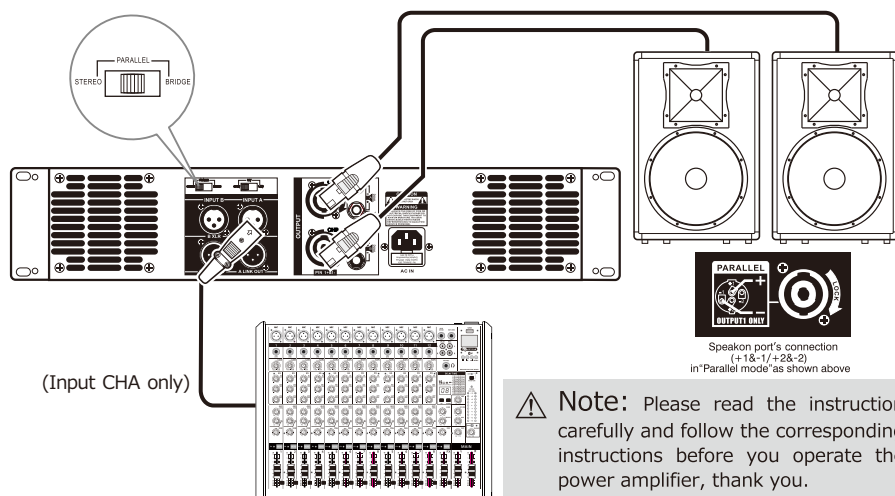
This mode is factory default settings, defaults to stereo mode before it leaves the amplifier factory.

1. Confirm stereo mode again, as shown "STEREO".
2. By linking the XLR interface for signal input, as shown.
3. Connect the speakers through the Speakon, the specific connection as shown below.



#### PARALLEL MODE

1. Confirm parallel mode again, as shown "PARALLEL".
2. By linking the XLR interface for signal input, as shown.
3. Connect the speakers through the Speakon, the specific connection as shown below.



### The SA SERIES amplifiers provide the following operation protections

#### • Short Circuit Protection:

When the amplifier's output terminals are short-circuited due to some reason, the output current forms a loop and becomes extremely high, potentially damaging the amplifier. The short circuit protection circuit safeguards the amplifier by cutting off the input voltage and interrupting the output current, thereby keeping the current within a safe range.

#### • Overheat Protection:

When the external ambient temperature is too high or an internal fault occurs, the amplifier may overheat, which can lead to permanent damage. The overheat protection mechanism activates in such situations, disabling the amplifier's output to prevent damage. This is typically achieved through temperature-sensing resistors. Once the temperature returns to a safe level, the protection mechanism deactivates, and the amplifier resumes normal operation.

#### • Overload Protection:

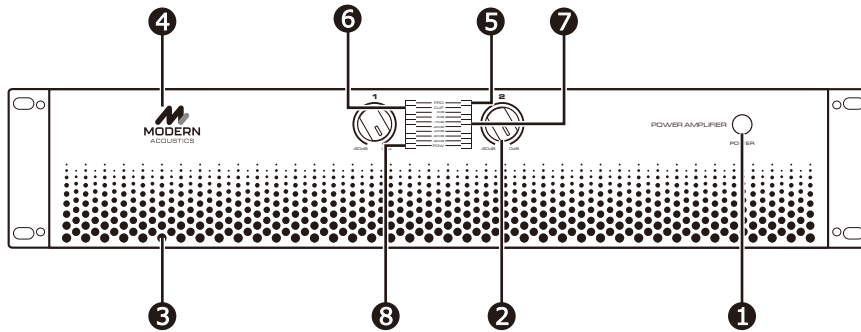
If the amplifier is under an excessive load without reaching a short-circuit condition, the short circuit protection will not engage. However, the output current may still exceed the amplifier's safe operating threshold. In this case, the overload protection circuit intervenes by regulating the input voltage and output current, ensuring the amplifier continues to operate within a safe range.

#### • Limiter and Compression Protection:

When a high-level input signal persists for a long time, the amplifier operates under high power output, resulting in excessive power consumption and severe heat generation, potentially leading to burnout. The built-in limiter prevents signal overload and transient spikes by reducing the amplitude of the input signal without distortion through a feedback mechanism, keeping the amplifier within a safe working condition.

## EACH CONTROLLER AND FUNCTIONS

### FRONT PANEL



#### ① Power button

Used to turn the power on or off.

#### ③ Air inlet

Air inlet of the cooling fan.  
Make sure not to block the air inlet.

#### ② Volume knob

Adjust the volume between -80~0dB.

#### ④ Panel

Magnetic suction detachable panel,  
dust removal.

### ⚠ WARNING

To ensure that the speaker does not emit loud noise, turn on the source device, turn on the mixer and processor, and finally turn on the power to the amplifier. When the system is turned off, Please reverse the order.

### LED light status indication

This indicator lights up when the power is turned on

#### ⑤ (PROTECT) Indicator

Two Red LED, one for each channel, illuminate when the cooling system is fault or short out.

#### ⑥ (CLIP) Indicator

Two Yellow LED, one for each channel, illuminate when the channel's output is being overdriven.

#### ⑦ (INPUT LEVEL) Indicator

Input level signal reaches "0 dB" means when full power usage.

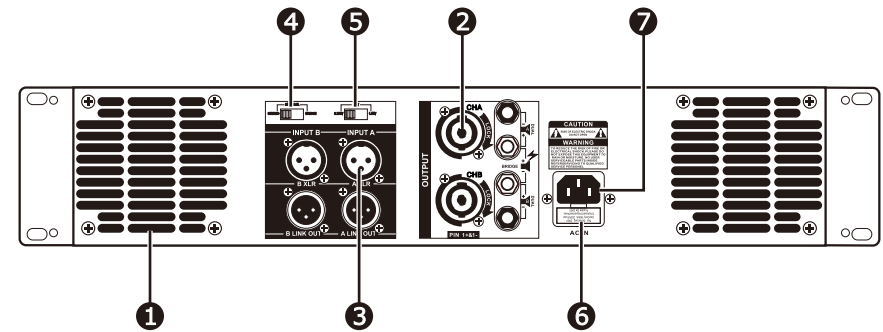
#### ⑧ (POWER) Indicator

Two Green LED, one for each channel, illuminate when the Power Button is on.

### ⚡ NOTICE

When the machine is used for a period of time, turn off the power, the CLIP indicator will light up for a few seconds and then slowly stop. This is normal, because the large electrolytic capacitor is discharging, so please do not open the machine under any circumstances. Cover and touch the internal components of the machine to avoid casualties!

### REAR PANEL

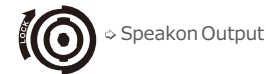


#### ① Fan

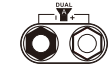
Fan outlet. Blowing from the front to the back for heat dissipation, making sure not to block the air inlet.

#### ② Audio output A/B interface

Two types of connections to the speaker output port are also provided for Channel A and Channel B.



⇒ Speakon Output



⇒ Binding Post Output

### ⚡ NOTICE

Do not touch the port or the metal part of the wire that is connect to the port. If the speakers are connected to multiple interfaces on the same channel, it will form a well connection, please ensure that the total impedance of the speakers to be connected is not too low. Please be careful not to connect or touch it by mistake.

#### ③ Audio input A/B interface

XLR 3-pin audio input interface ( INPUT'A&B)

#### ④ Working mode

STEREO/BRIDGE/PARALLEL

#### ⑤ Input sensitivity

0.775V / 1.0V / 1.44V

#### ⑥ Fuse

Protect the machine when it occurs short circuit

#### ⑦ AC IN connector

For power play in 230V 50Hz

Connect the power wire to the (AC IN) connector

