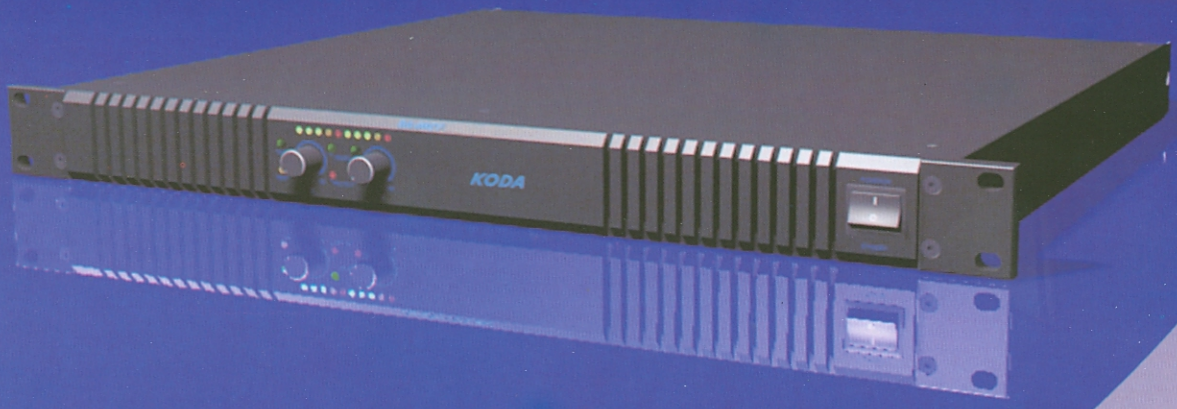
Professional Digital Power Amplifier

Instruction manual



DA-2WA DA-4WA

DA-2WB DA-4WB

Preface

Thank you very much for your choice of *DA-2W A (B) /DA-4W A (B)* digital power amplifier. Please read the manual carefully before operation so as to bring the efficiency and function of the device into full play. Please pay attention to the application Characteristics that will be beneficial to it's maintenance.

Introduction

The 21st century is the numerical era and the digital sonic equipment is the most effective method to pursue the audio result of "original flavor" .The digital development of amplification system is very fast, however the digital process of audio signal treatment equipment develops even faster. All types of programmed digital audio processors have been entering the market in large quantities for your selection. Amplification system has entered digital net transmission era.

Today audio power amplifier is still mainly of analogue amplification function, which has developed in technical procedure to such status that it encounters slow development period. It is the inevitable trend that digital power amplifier (DPA) of strong after-effect will replace analogue amplifier because of its many unique merits.

Safety precautions

The hazardous voltage and non-insulated parts inside the device is dangerous enough to cause electric shock to human being.

Warning: There are dangerous accessories of high voltage in the device, so do not remove the cover. Have it inspected and maintained by professional personnel.

In order to prevent fire and electric shock, please do not put the device close to heat source or explore it in rain or humid environment.

Model	Name	Parameters		
DA-2W A(B)（2CH）	Output power (RMS)	Impedance	Mono channel	Bridge connection (single channel output)
		1Ω	NA	—
		2Ω	2×2000W	—
		4Ω	2×1200W	4000W
		8Ω	2×700W	2200W
DA-4W A(B)（4CH）	Output power (RMS)	2Ω	NA	—
		4Ω	4×650W	—
		8Ω	4×350W	2×2000W
DA-2W A(B)（2CH）	Consumption average	500VA		
DA-4W A(B)（4CH）		900VA		
Bandwidth（1W，8Ω）		5Hz ~ 30kHz		
Damping factor (10Hz~400Hz)		>600		
Slew Rate(8Ω Load)		40V/μs		
Signal & noise ratio（20Hz~20kHz）		⩾100 dB/A		
Input Impedance		10kΩ(Imbalance)		
Total harmonic distortion		(0.1W ~ Rate output power)<0.1%		
Intermodulation distortion		(0.1W ~ Rate output power)<0.02%		
Power voltage range（50Hz/60Hz）		AC95V-265V~		
Operating temperature		0℃ ~45℃		
Dimension		(Length×Width×Height) 496 × 482 × 44(mm)		
DA-2W A(B)（2CH）		net weight	About 9kg	gross weight	About 12kg
DA-4W A(B)（4CH）			About 11kg		About 14kg
Carton size		(Length×Width×Height) 630 × 580 × 100(mm)		

Merits of digital power amplifier

Feature description	Digital power amplifier
Instant signal response (relating to clarity of medium and high frequency tone quality)	Slew rate（Slew）≥40v/μs
Impedance (relating to clarity of bass)	≥600(100Hz)
Power utilization rate (efficiency) (namely energy consumption)	≥90% (Power utilization rate does not decrease according to the reduction of load impedance and the heat rate is small).
Demand of AC power voltage	Usually Applied within the voltage of AC95V～265V and need no transition.
Signal dynamic range (relating to undistorted performance of extra strong signal and weak signal).	≥95dB
Temperature increases in the device.	High power utilization,heat emission in the device is reduce,the temperature rises slowly and heat dissipation is easy.
Reliability	Temperature rises slowly in the device enabling obvious improvement of reliability.
Dimension and weight	1U volume standard on case,the net weight of 2CH model is about 9kg,the net weight of 4CH model is about 11kg.

Perfect protection measure of reliability

The product has fairly perfect protection measure of reliability that can prevent damage of both amplifier as well as speaker system connected to it in normal operation.

- **Output short circuit protection.**

When short circuit occurs to the external connected load system (protection gate limit is smaller than 1.0 ohm), digital power amplifier will forbid power output and automatically return to power output once the short circuit is eliminated.

- **Over temperature protection**

The amplifier operates in set temperature scope. If the environment temperature exceeds fixed rate, power output will automatically decrease to gradually lower the temperature inside the device. (The operation status at this moment is termed as realization of limited range of output voltage and the power output will be reduced.)

- **Clip protection**

When input signal is too strong or the signal appears to be of big peak level, protection slice circuit built in the device will automatically limit the input of too big peak signal so as to avoid the damage to speaker system (especially treble speaker) by clipped signal without creating clipping signal phenomenon.

- **Postponement power output restriction**

During long-term and continuous output of non-musical signal, the amplifier will automatically attenuate input signal and limit output power in an attempt to prevent any damage to the amplifier and speaker.

- **Output protection**

If output signal carries quite big DC voltage, DC output restriction unit installed in the amplifier will protect the bass speaker from being damaged.

- **High frequency protection**

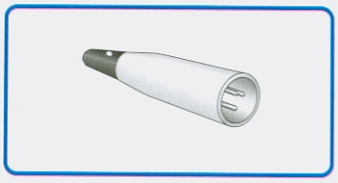
In case of occurrence of strong and lasting non-musical signal exceeding acoustic frequency range at input terminal, the yellow LED warning light on front panel will blink to protect the speaker system.

- **Power protection**

The device will automatically shut off when power voltage exceeds normal power supply range of the amplifier.

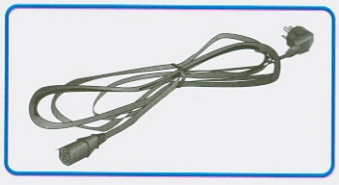
Accessories

Digital power amplifier 1 set

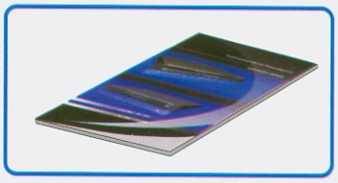


Input plug 2 channel 2pieces
4 channel 4pieces

Output plug 2 channel 2pieces
4 channel 4pieces



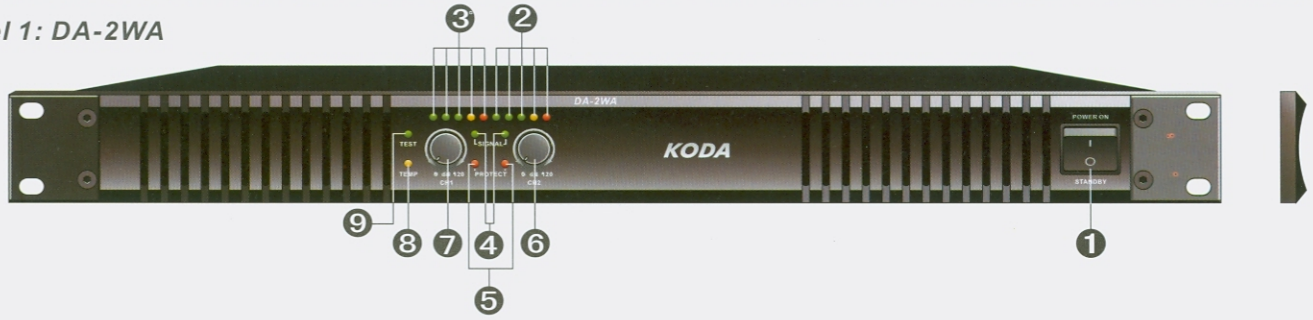
Power cable 1 piece



Manual 1 set

2 channel front panel — 2×2000W/2 Ωload

Molel 1: DA-2WA

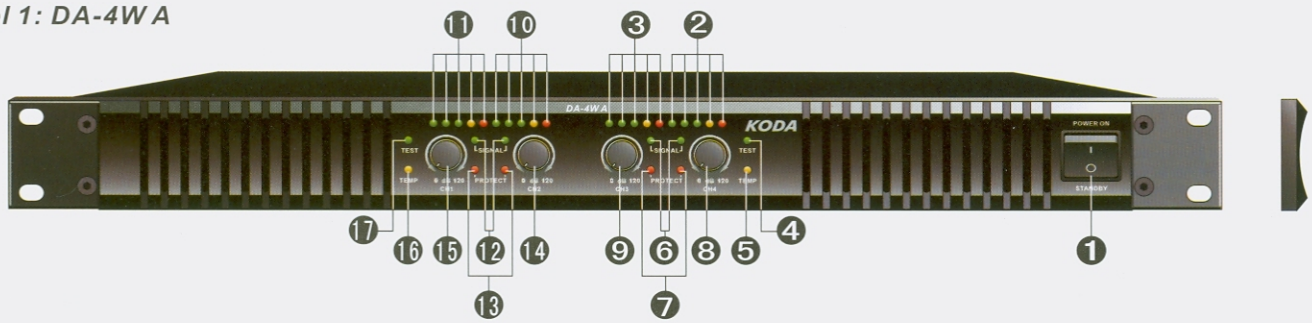


Molel 2: DA-2W B (function same as *DA-2W A*)

❶ Power switch
❷ CH2 volume indicator
❸ CH1 volume indicator
❹ CH1 and CH2 signal indicator (SIGNAL)
❺ CH1 and CH2 protection indicator (PROTECT)
❻ CH2 volume adjustment potentiometer (0—120 dB)
❼ CH1 volume adjustment potentiometer (0—120 dB)
❽ Over temperature indicator (TEMP)
❾ Self test indicator (TEST)

4 channel front panel — 4×350W/8Ωload 2×2000W/8Ωload(bridge)

Molel 1: DA-4W A

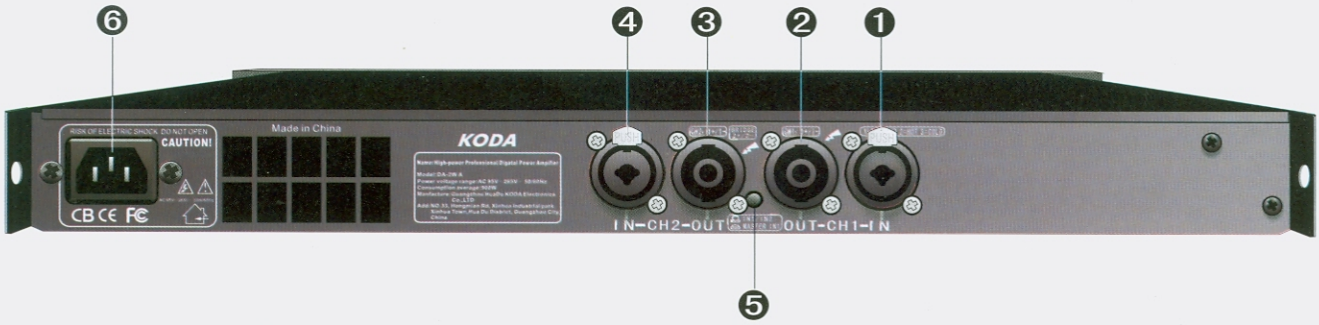


Molel 2: DA-4W B (function same as *DA-4W A*)

❶ Power switch
❷ CH4 volume indicator
❸ CH3 volume indicator
❹ CH3 and CH4 test indicator (TEST)
❺ CH3 and CH4 over temperature indicator (TEMP)
❻ CH3and CH4 signal indicator (SIGNAL)
❼ CH3 and CH4 protection indicator (PROTECT)
❽ CH4 volume adjustment potentiometer (0—120 dB)
❾ CH3 volume adjustment potentiometer (0—120 dB)
❿ CH2 volume indicator
⓫ CH1 volume indicator
⓬ CH1and CH2 signal indicator (SIGNAL)
⓭ CH1 and CH2 protection indicator (PROTECT)
⓮ CH2 volume adjustment potentiometer (0—120 dB)
⓯ CH1 volume adjustment potentiometer (0—120 dB)
⓰ CH1 and CH2 over temperature indicator (TEMP)
⓱ CH1 and CH2 test indicator (TEST)

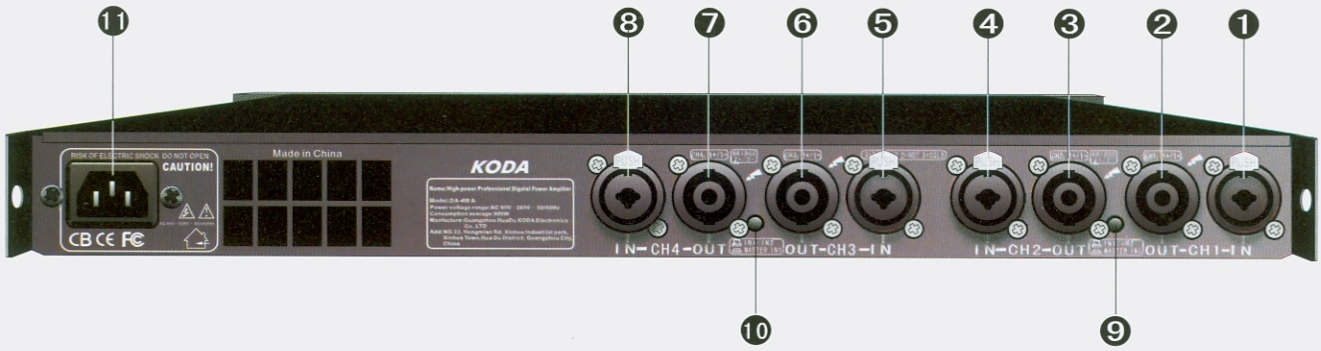
Front panel/rear panel instruction

2 channel rear panel



❶ CH1 audio signal input terminal
❷ CH1 audio signal output terminal
❸ CH2 audio signal output terminal
❹ CH2 audio signal input terminal
❺ Signal transition switch (single signal—dual signal)
❻ Power input socket

4 channel rear panel



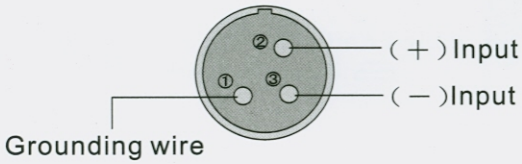
❶ CH1 audio signal input terminal
❷ CH1 audio signal output terminal
❸ CH2 audio signal output terminal
❹ CH2 audio signal input terminal
❺ CH3 audio signal input terminal
❻ CH3 audio signal output terminal
❼ CH4 audio signal output terminal
❽ CH4 audio signal input terminal
❾ CH1 and CH2 signal transition switch (single signal— dual signal))
❿ CH3 and CH4 signal transition switch (single signal— dual signal))
⓫ Power input socket

Input plug connection mode

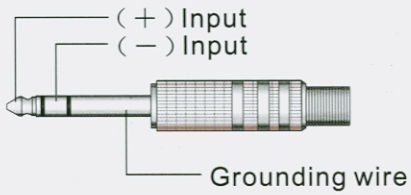
The input signal connection of the device is 3-core input socket, which is divided into balance input connection and unbalance input connection. The connection method is shown in the following illustration:

1. Balance input connection

■ Bayonet plug connection

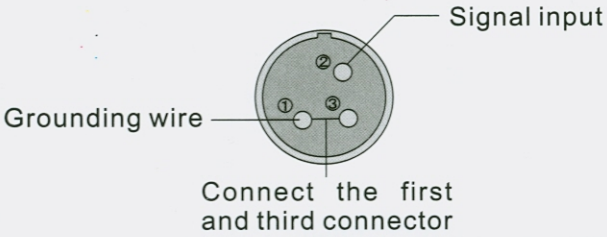


■ Φ6.35 three-core plug

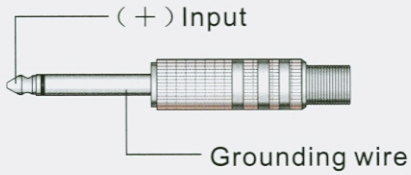


2. Unbalance input connection

■ Bayonet plug connection



■ Φ6.35 two-core plug



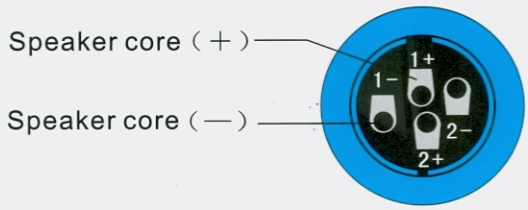
Output plug connection mode

Output plug is 4P Speakon locked plug, which is divided into single channel connection and bridge connection. The connection method is shown in the following illustration.

1. Single channel connection

Positive pole of speaker's core is connected with 1+ plug of 4P Speakon.

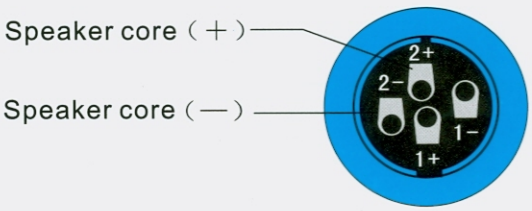
Negative pole of speaker's core is connected with 1- plug of 4P Speakon.



2. Bridge connection

Positive pole of speaker's core is connected with 2+ plug of 4P Speakon.

Negative pole of speaker's core is connected with 2- plug of 4P Speakon.



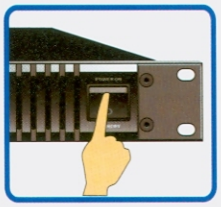
Pre-starting preparation

- The power voltage to be applied should conform to the requirements on the instruction manual.
- Before connecting to power supply, link the signal input and output plugs according to the connection method of the manual and verify that they are properly connected.
- Before turning on or off digital power amplification series device, you must adjust its volume to the minimum in prevention of any damage to the device and speaker.

Basic operation

- Turn on and adjust volume

When the power is connected to the device through the plug, the device is under power and enters pre-operation status.



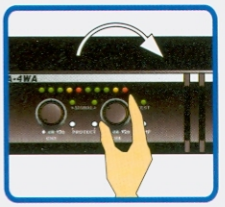
Press power switch(POWER ON) and turn on the device.

Signal indicator (SIGNAL) is on, showing that signal has entered the device. If the indicator is not on, no signal input is present.

DA-2W A (B)

Use CH1 and CH2 knobs of DA-2W A(B) to achieve gain and attenuation of volume of two channels and turn them to proper positions according to the need.

DA-4W A (B)



Use CH1、CH2、CH3 and CH4 of DA-4W A(B) to achieve gain and attenuation of volume of four channels and turn them to proper positions according to the need.

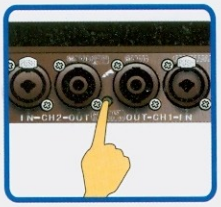
■ Signal input and output transition

- **Single channel input of signal,Single and Dual channel output or on bridge connection status: According to the output plug connection mode,**

  If on (1) connection mode (as page 6),it is single channel connection,Dual channel output.

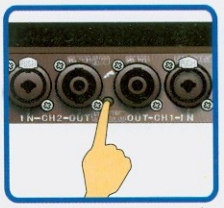
  If on (2) connection mode (as page 6),it is bridge connection status,single channel output.

Press the transition switch on the rear panel



- **Dual channel input and dual channel output of signal.**

Bounce the transition switch on the rear panel.



- **Refer to the above steps for the operation of signal transition of DA-4W A(B).**

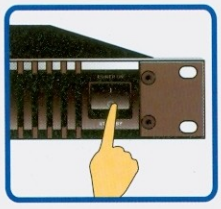
■ Turn off

DA-2W A（B）

Use CH1 and CH2 control knobs of DA-2W A(B) to adjust the volume of two channels to 0dB separately.

DA-4W A（B）

Use CH1、CH2、CH3 and CH4 control knobs of DA-4W A(B) to adjust the volume of four channels to 0dB separately.

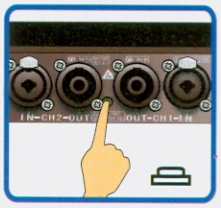


Press the power switch(STANDBY) and turn it off.

Precautions

Attention

- If the overload protection indicator (PROTECT) is on during operation, it shows the device is out of order. It should be stopped and inspected by professional maintenance personnel.
- When temperature in the device is too high, the over temperature indicator (TEMP) will be on and the device will stop operation. It will automatically reset when temperature inside the device falls down. If it cannot reset, please turn it off first and ask professional maintenance personnel to inspect it.
- Do not connect in parallel or series the output terminal of the device with the output terminal of other amplifier.
- For stereo result, dual channel signal input and dual channel power signal output are used. The dual channel input plugs of speaker are 1+ and 1- respectively.
- For mono channel function resulted from single channel signal input and single channel power signal output,press the transition switch on the rear panel(as1-1).the connection status of input plugs of speaker should be changed into 2+ and 2- in bridge connection.
- Please turn off the power if the amplifier stands by over 3 hours.



(1-1)