



Beta Three

Norm Series Multi-channel power amplifier



ATTENTIONS

- ▲ The product complies with standard safety regulations. Incorrect operations may cause fire or electric shock. Please follow strictly the operation steps for device installation and repair.
- ▲ Be ware of high voltage in the device, do not open the chassis.
- ▲ Do not touch the output terminals marked with ⚡ when the device is on working condition.
- ▲ Keep good cooling. The ventilation shall not covered and blocked by any objects. For rack installation, make sure there is at least 10 cm space away from the ventilation.
- ▲ Do not insert any metal parts or inflammable objects to the device due to high risk of electric shock and fire.
- ▲ Do not expose the device to rain or at high humidity places. Do not put any sundries onto the device.
- ▲ Make sure to use the same components to do repair or replacement for the ones marked with ▲
- ▲ Make sure the local voltage is in compliance with the device.
- ▲ Select suitable impedance, do not work overload for long time.
- ▲ Take off power plug from mains when the device is not used for long time.
- ▲ Please consult local dealers or technicians to do repair works.

■ SYMBOLS:

- The equilateral triangle with lightning bolt warns the user of dangerous voltage levels localized within the cabinet.
- The equilateral triangle with exclamatory mark means the important operation in the user's manual.

CATALOGUE

1、 Introduction	P1
2、 Parameters	P2
3、 Installation	P3
4、 Front panel	P4
5、 Indicators on front panel	P4
6、 Rear panel	P5
7、 Power supply	P7
8、 Input/Output connectors	P7
9、 Function setup and cable connection	P8
10、 Operations	P9
11、 Protection and the cooling system	P9
12、 Troubles and trouble shootings	P10
13、 Safety attentions	P11

Manufacturer reserves rights for any product upgrade. Please be understandable that the new information does not be informed in time.

Pictures in the manual are for reference only, all details are subject to the real product.

1. INTRODUCTION

Thanks for selecting our product.

Norm series multi-channel professional amplifier is designed with a stable and high efficient structure for thermal dissipation. The design adopts advanced simple output circuit along with precise detection and protection that achieve superior stability. The innovative temperature control and MF adjustment make Norm series also a more efficient performance.

The standardization and diversification of Norm series fully meet the different requirements of PA sound reinforcement. The various connectors and simple controls ensure more application convenience.

Features:

- Multiple power levels / channels for flexible system installations.
- Versatile ways to set up: channel input→ link→ power output.
- Innovative MF adjustment to control the distortion of middle frequency when the amplifier works on big output.
- Low distortion, low noise, high-speed driving for amplification to make powerful and clean sound.
- The advanced heat management system ensures efficient cooling and all heating components are working in a stable way.
- Clear indicators and touch-proof volume knobs on the front panel.
- Easy to disassemble the chassis for dust cleaning.

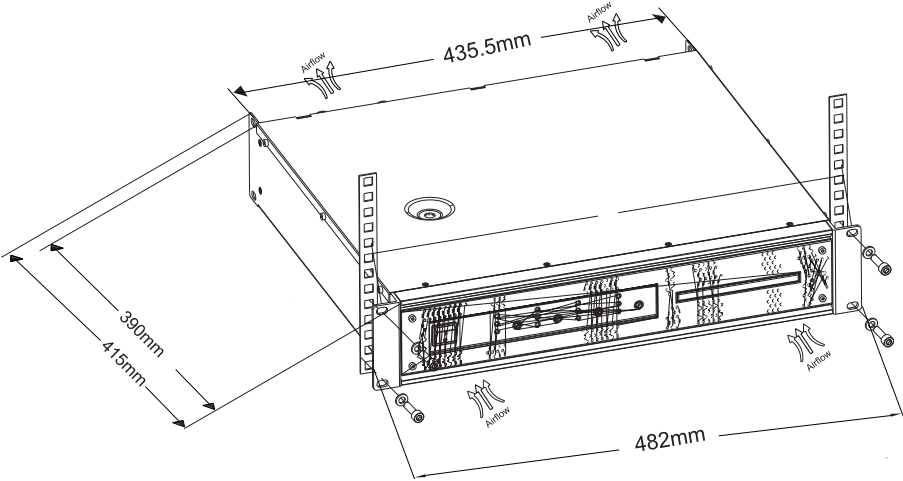
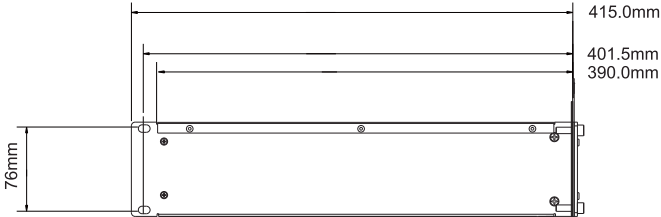
Norm series is built to be put into the most tough situation to drive sound reinforcement, with its high reliability, long product life, and severe circuit protections being considered by the manufacturer.

Please read carefully the user's manual the chapters for input, output, and power connection. Read completely the manual to know best advices for product operations and use high performance of your products.

2.PARAMETERS

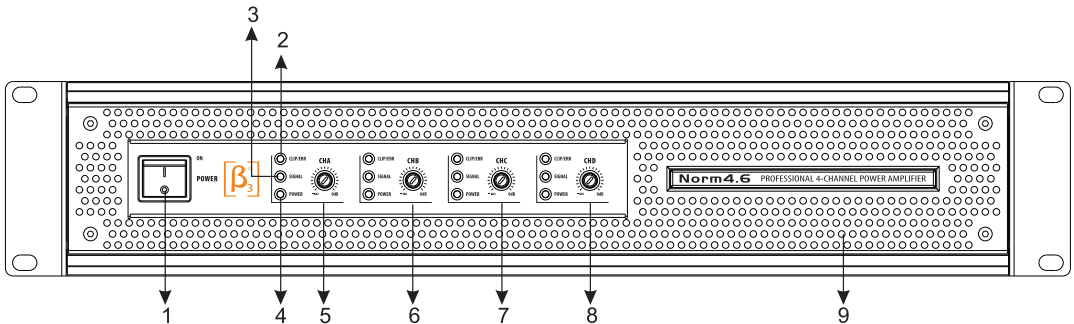
Model	2-channel amplifiers				3-channel amplifiers				4-channel amplifiers				
	Norm2.3	Norm2.4	Norm2.6	Norm2.10	Norm3.3	Norm3.4	Norm3.16	Norm3.22	Norm4.4	Norm4.6	Norm4.10	Norm4.20	Norm4.28
Rated power 8 Ω	CHA	280W	400W	600W	1000W	1000W	400W	400W	400W	600W	1000W	400W	400W
	CHB	280W	400W	600W	1000W	280W	400W	400W	400W	600W	1000W	400W	400W
@1KHz, 0.5%THD+N	CHC				280W	400W	600W	1000W	400W	600W	1000W	600W	1000W
	CHD								400W	600W	1000W	600W	1000W
Rated power 4 Ω	CHA	450W	650W	1000W	1600W	450W	650W	1000W	650W	1000W	1600W	650W	650W
	CHB	450W	650W	1000W	1600W	450W	650W	1000W	650W	1000W	1600W	650W	650W
@1KHz, 0.5%THD+N	CHC				450W	650W	1000W	1600W	650W	1000W	1600W	1000W	1600W
	CHD								650W	1000W	1600W	1000W	1600W
Max Gain	35.4dB	37.5dB	39dB	41.2dB	35.4dB	37.5dB	37.5/39dB	37.5/41.2dB	37.5dB	39dB	41.2dB	37.5/39dB	37.5/41.2dB
Type	A/B	H	H	H	A/B	H	H	H	H	H	H	H	H
Normal current consumption 1/8 Power 4Ω Speaker	1.8A @230V	1.6A @230V	2.2A @230V	3.2A @230V	2.7A @230V	2.3A @230V	3.2A @230V	3.4A @230V	3.2A @230V	4.4A @230V	6.4A @230V	4A @230V	5.2A @230V
Max current consumption 1/3 Power 4Ω Speaker	2.7A @230V	3.3A @230V	5A @230V	7A @230V	4.1A @230V	4.8A @230V	7A @230V	6.8A @230V	6.6A @230V	10A @230V	14A @230V	8.6A @230V	10.8A @230V
Net weight	12kg	12kg	13kg	14kg	14kg	14kg	15kg	15kg	16kg	17kg	20kg	16kg	17kg
THD	<0.025% @8Ω,20Hz-20kHz												
IMD	<0.05% @8Ω,60Hz/7kHz 4:1												
Frequency Response	< ± 0.5dB 20Hz-20kHz												
Phase	< ± 15°												
Damping factor	>300:1 8Ω @20Hz-1kHz												
Seperation	>80dB 1kHz @8Ω rated power												
S/N ratio	>106dB 1kHz, A weighting @8Ω rated power												
Channel gain difference	<0.15dB 20Hz-20kHz												
Input sensitivity	0.775V @8Ω rated power												
Slew rate	18V/us												
Input impedance	unbalanced input>10kΩ balanced input >20kΩ												
Input connector	2 × XLR					3 × XLR					4 × XLR		
Output connector	link output:2 × XLR power output:2 × NL4 + 2 × binding post					link output:1 × XLR + 1 × TRS power output:3 × NL4 + 3 × binding post					link output:1 × XLR power output:4 × NL4 + 4 × binding post		
Cooling	variable fan speed, airflow from front to back												
Mains	AC 220-230V 50Hz/60Hz												
Temperature	working temperature -10°C~40°C storage temperature -25°C ~80°C												
Dimension	89mm X 483mm X 390mm(handle included)415mm												

3. INSTALLATION



4. FRONT PANEL

Take the 4-channel model as sample:



- | | |
|--|--------------------------|
| 1、 Power switch | 6、 Channel-B volume knob |
| 2、 Overdrive / Error indicator (same for each channel) | 7、 Channel-C volume knob |
| 3、 Signal output indicator (same for each channel) | 8、 Channel-D volume knob |
| 4、 Power indicator (same for each channel) | 9、 Ventilation hole |
| 5、 Channel-A volume knob | |

5. INDICATORS ON FRONT PANEL

PWR power indicator, power on.

SIGNAL signal output indicator for each seperated channel

SIGNAL signal indicator is equivalent to outputs paralleled on the circuit. When the Gain is turned to minimum and whether there is input signal, the signal indicator will not light up.

CLIP / ERR output overdrive / error indicator for each seperated channel.

When input signal is too big, the CLIP / ERR indicator lights up. Too strong and continuous clip may cause damage to the speaker and sound. Please reduce gain or signal input when the clip is too frequent.

CLIP / ERR for more indications: (next page)

1.CLIP / ERR lights up when the amplifier is powered on during self-examine process. The process has not any output and after 2s examination, CLIP / ERR lights off.

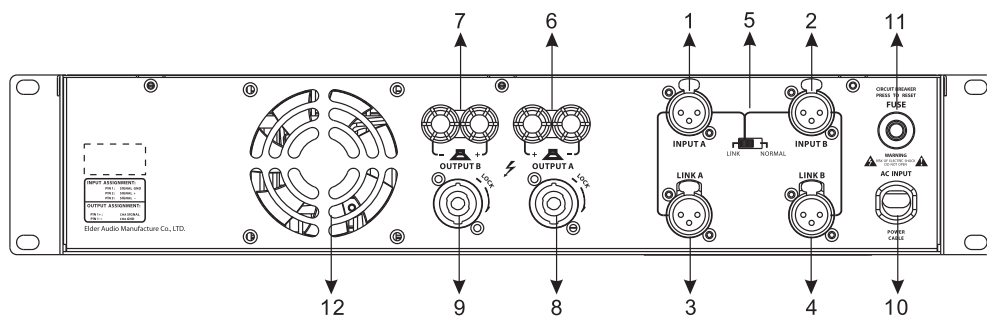
2.CLIP / ERR lights up when the amplifier is short circuit or at too low impedance, however it can be off by turn off volume. Please check the loading impedance and output connection.

3.CLIP / ERR lights up when device temperature is over the limit and output is temporarily cut off. Please turn off the amplifier, improve the cooling condition, and clean the ventilation.

4.CLIP / ERR lights up when deflection appears, if you are not sure the problems, please consult technicians.

6. REAR PANEL

2-Channel model.



1.Channel-A signal input (XLR)

2.Channel-B signal input (XLR)

3.Link-A signal output (XLR)

4.Link-B signal output (XLR)

5.Switch for link or normal mode

6.Channel-A power output (binding post)

7.Channel-B power output (binding post)

8.Channel-A power output (NL4)

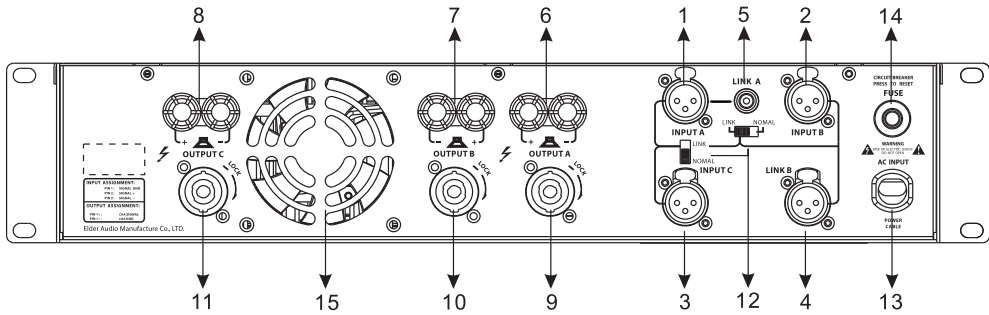
9.Channel-B power output (NL4)

10.Power cord

11.Fuse

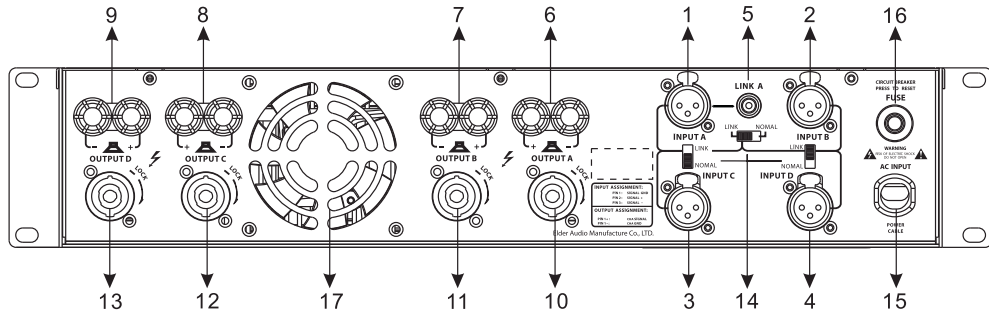
12.Ventilation hole

3-channel model



- | | |
|---|-------------------------------------|
| 1. Channel-A signal input (XLR) | 9. Channel-A power output (NL4) |
| 2. Channel-B signal input (XLR) | 10. Channel-B power output (NL4) |
| 3. Channel-C signal input (XLR) | 11. Channel-C power output (NL4) |
| 4. Link-B signal output (XLR) | 12. Switch for link or normal mode. |
| 5. Link-A signal output (TRS) | 13. Power cord |
| 6. Channel-A power output (binding post) | 14. Fuse |
| 7. Channel-B power output (binding post) | 15. Ventilation hole. |
| 8. Channel-C power output (binding post) | |

4-channel model.



- | | |
|---|-------------------------------------|
| 1. Channel-A signal input (XLR) | 10. Channel-A power output (NL4) |
| 2. Channel-B signal input (XLR) | 11. Channel-B power output (NL4) |
| 3. Channel-C signal input (XLR) | 12. Channel-C power output (NL4) |
| 4. Channel-C signal input (XLR) | 13. Channel-D power output (NL4) |
| 5. Link-A signal output (TRS) | 14. Switch for link or normal mode. |
| 6. Channel-A power output (binding post) | 15. Power cord |
| 7. Channel-B power output (binding post) | 16. Fuse |
| 8. Channel-C power output (binding post) | 17. Ventilation hole. |
| 9. Channel-D power output (binding post) | |

7. POWER SUPPLY

- a. Make sure the local voltage complies with the voltage requirement indicated at the back of amplifier.
- b. Make sure the power cord and socket are good, the plug type matches the socket.
- c. Make sure the amplifier is well connected to earth.
- d. Pull out plug after power off.
- e. Select the power volume based on power consumption indicated in the data sheet.

8. INPUT / OUTPUT CONNECTORS

■ Input connectors

The product is designed with balanced input circuit to lower noise, please use balanced connection for the device.

- ▲ Note: If your signal output device is an unbalanced circuit design, please do not use single core shielded wire, connect the negative pole of dual core wire to earth and make balanced input connection to get equivalent noise restrain.

There is a XLR socket for each channel. In LINK mode, the input sockets are in parallel, you can input signal to any channel socket.

In different models, there are XLR and TRS socket for link output, which is paralleled with the input socket. You can connect the other amplifier from the output socket and even link in groups.

This link method is very convenient, but link too much will cause signal interference or lost.

- ▲ Note: In LINK mode, do not input signal to both channel sockets at the same time, which will cause abnormal operations.

■ Output connectors

There are one group binding post and one NL4 MP socket as power output connector for each channel, which are in parallel connection. For each channel, the red binding post connects positive pole of power output while the black binding post connects negative pole.

The 1+ leg of NL4 socket connects positive pole of power output while 1- leg connects negative pole.

- ▲ Note: For each channel, do not drive the speaker whose impedance is less than 4ohm, which may cause abnormal or overheat.
- ▲ Note: The output voltage may cause electric shock. Make sure the amplifier is off when you connect the speaker. Do not touch the naked part between amplifier output and the speaker wire.

9. FUNCTION SETUP AND CABLE CONNECTION

■ Gain control

Turn the gain knob clockwise on the front panel to increase gain, turn anticlockwise to decrease gain.

Note! The gain knob is not for amplifier power rather than amplification times for input signal.

Note! When the gain is turned too small (less than 12 o'clock position), the signal may be damaged in pre-process, in which case, the amplifier cannot deliver full power by increase signal input.

■ Mode select and signal cable connection.

Connection diagram

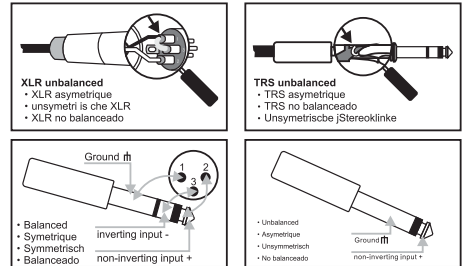
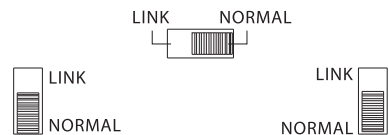


Diagram for plug connection

- ⚠ All the input / output sockets and binding posts are located on back panel, please consult profess or to connect cable. There is high voltage from output terminal when the device is working, be ware electric shock and make sure power off before connecting cable. Manufacturer shall not be responsible for any kind of device damages or human injures caused by incorrect operation.

A. NORMAL MODE

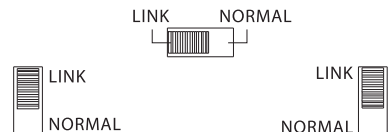
The factory setting is at NORMAL mode as the right picture indicated:



Signal for two channels that is closed to power switch play individually and is amplified individually as well.

B. LINK MODE

Turn to LINK mode as the right picture indicated: the signal can be input to any channel that is closed to power switch, the same signal can be output from any channel linked.



Note: do not input signal to the linked channels, neither parallel the output terminals.

10. OPERATIONS

Please take the following steps:

1> Power on

- a. make the correct setting and connection
- b. check if there is short output connection, check if there is incorrect low impedance.
- c. check local electricity to conform to the voltage of our product.
- d. make sure the switch is off, and the volume is minimum.
- e. connect to the main, turn on signal device and other processors.
- f. turn on the switch.
- g. turn the volume clockwise to a suitable level.

2> Power off

- a- turn the volume to minimum
- b- turn off the switch
- c- turn off signal device and other processors.

11. PROTECTION AND COLLING SYSTEM

Efficient and secure circuit design for low defect rate and high protection to avoid damage to the sound system due to improper operation and application.

Over-current and overdrive protection.

Full protection to the power output IC regarding output overdrive, short circuit, wrong loading and incorrect wiring.

Output DC protection and limit to HF to avoid damage to the system.

Temperature protection in tough condition.

12. TROUBLES AND TROUBLE SHOOTINGS

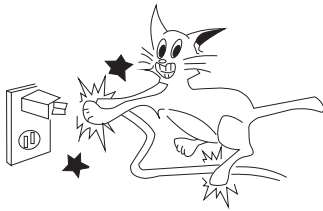
Trouble	SN	Trouble shootings
No sound, no power indication	1	Check if the plug is well connected to the socket.
	2	Check if there is AC220-240V, 50/60Hz on the socket.
	3	Check if the circuit breaker on real panel is shut off, push it back.
No sound, power indicator is on, SIG indicator is off	1	Check if the signal cable is connected well.
	2	Check if the signal device is on and its volume.
	3	Check if the amplifier volume is on.
CLIP / ERR indicator flashes abnormal sound.	1	Check if the signal input is too high.
	2	Check if output connection is short, check the loading impedance and then restart the device.
In LINK mode, one channel no sound.	1	Check and make sure the switch at rear panel is at LINK position
	2	Check if channel volume is on.
Others	1	Check the device setting and connection.
	2	Consult local dealer or visit WWW.3G-SYS.COM for more information.

13. SAFETY ATTENTIONS

SAFETY REGULATIONS

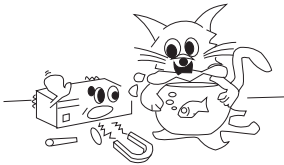
ABNORMAL PHENOMENA:

Please turn off the power and pull out the plug when
You find unusual sound or smell when operation.



POWER CORDS PROTECTION

Don't touch power cords with wet hands to avoid
electric shock.
Don't put the cords in crowded people.

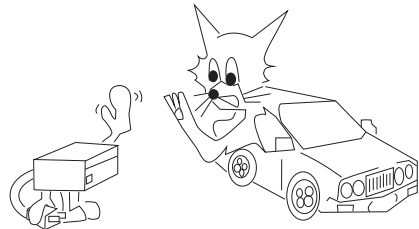


KEEP AWAY FROM WATER AND SUNDRY GOODS

**DON'T OPEN THE COVER IF NOT GUIDED
BY A QUALIFIED ELECTRICIAN**



**PULL OUT THE POWER CORDS TO AVOID
FIRE WHEN YOU DON'T USE THIS UNIT**





Beta Three

NORM SERIES

MULTI-CHANNEL POWER AMPLIFIER