Nakamichi

NHTD200.4

User Manual

CLASS-D 4 CHANNEL POWER AMPLIFIER

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INTRODUCTION

Thank you for your purchase of our Nakamichi product and we warmly welcome you to the Nakamichi family! Do keep your original invoice and purchase receipt in a safe place in case of future service and warranty claims. You may also contact your appointed Nakamichi service agent for any future technical support requirements.

ACCESSORY LIST

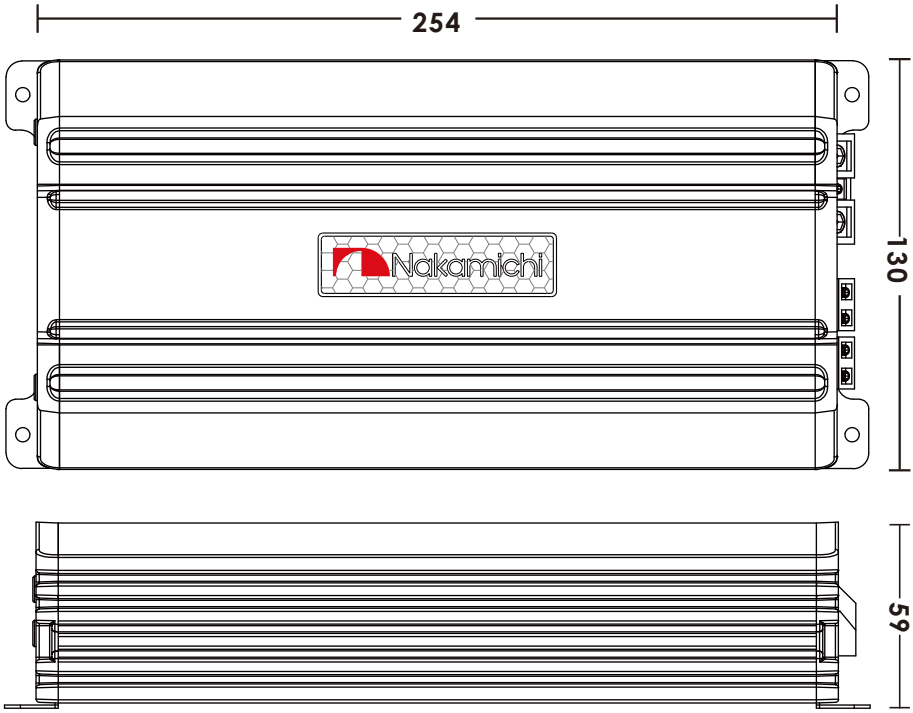
1. User Manual	1pc
2. Amplifier	1pc
3. Mounting Screw (Φ4x15mm)	4pc
4. Wrench	2pc
5. Hight input wire	2pc

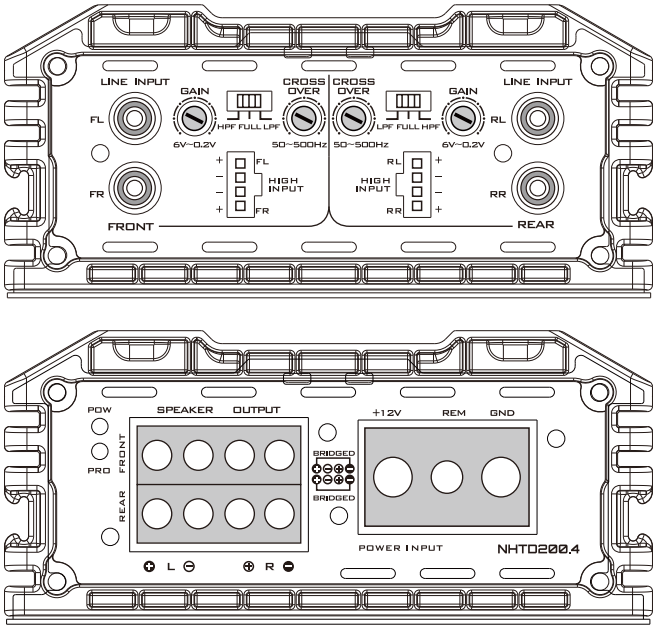
SPECIFIATIONS

N-power Output@4Ω	200W X 4
N-power Output@2Ω	300W X 4
N-power Output@4Ω(bridged)	600W X 2
Max power	5600W
T.H.D	≤0.1%
Frequency Response	20Hz-20kHz
Signal To Noise Ratio	≥85dB
Sensitivity	0.2~6V
Unit Dimensions(LxHxW)	254x130x59mm
Net Weight	Approx.2.28kg
Box Dimensions(LxHxW)	329x200x88mm
Gross Weight	Approx. 2.51kg

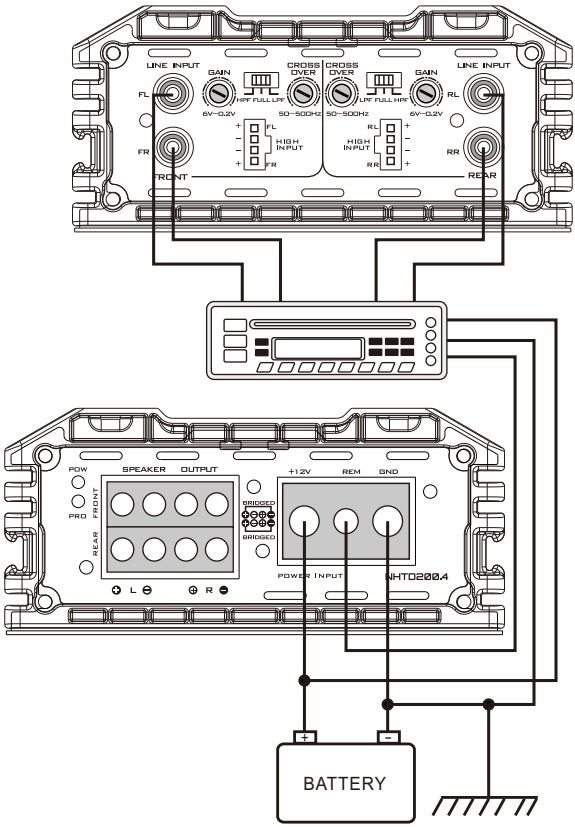
All specifications subject to change without notice.

DIMENSIONS (UNIT:MM)





POWER CONNECTION LEADS



Notes on the power supply

Connect the +12V power input lead only after all other leads have been connected. Be sure to connect the ground wire of the unit securely to a metal part of the car. A lose connection may cause a malfunction of the amplifier.

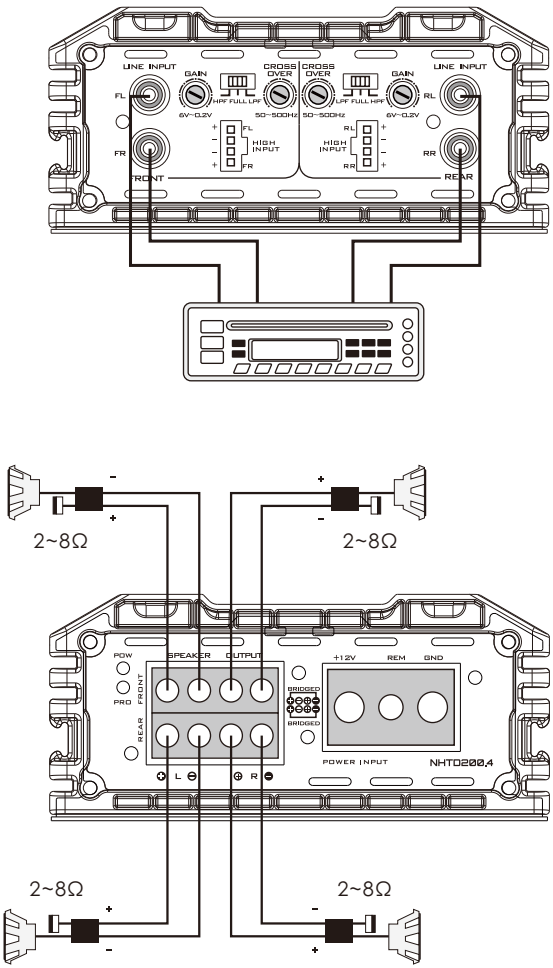
Control line:

The unit is turned on by applying +12Volts to this terminal. This terminal does not draw heavy current like the two power terminal so a thinner connecting wire is acceptable. Standard 18 GAUGE is fine and the standard colour is Blue.

SPEAKER CONNECTION LEADS

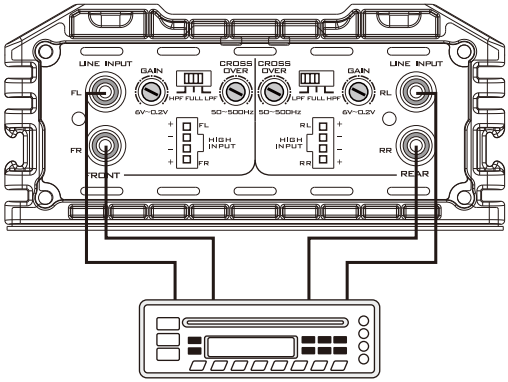
Use the power supply lead with a fuse attached whose value is the same as original fuse. Place the fuse in power supply lead as close as possible to the car battery.
During a full power operation, MaxImum current will run through the system. Therefore. Make sure the that the leads to be connected to the +12V and GND terminals of the unit respectively must be larger than 8-Gauge(AWG.8).

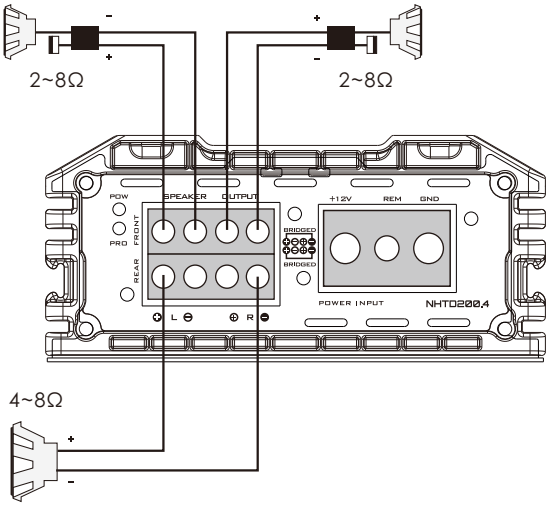
CONNECTION 1: 4-CHANNEL MODE



SPEAKER CONNECTION LEADS

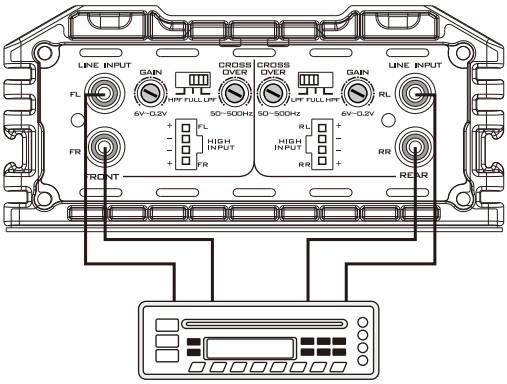
CONNECTION 2: 3-CHANNEL MODE

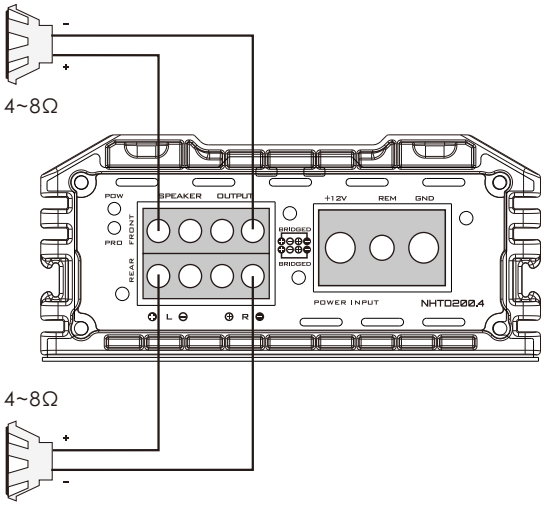




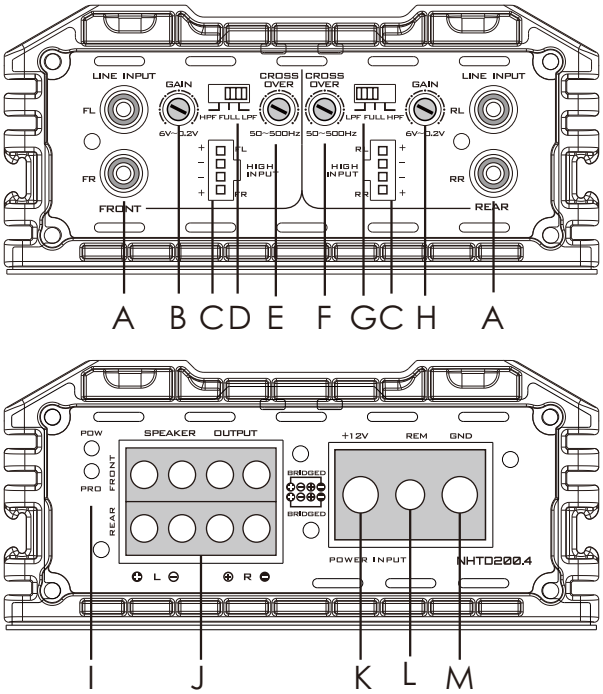
SPEAKER CONNECTION LEADS

CONNECTION 3: 2-CHANNEL BRIDGED CONNECTION





PANEL CONTROLS AND FEATURES



A. LOW LEVEL RCA INPUT
These RCA input jacks are connected to the source unit RCA low level outputs.

B. FRONT CHANNEL GAIN CONTROL
Gain control matches the sensitivity of the power amplifier to the source signal voltage

C. HIGH LEVEL RCA INPUT
These RCA input wire are connected to the high-level output of the source unit speaker. It is recommended to use high-quality twisted pair automotive audio wire to reduce the possibility of audio signal attenuation.

D. FRONT CHANNEL CROSSOVER CONTROL
High pass/Low pass/full frequency selector switch

E. FRONT HIGH-PASS/LOW-PASS CROSSOVER FREQUENCY KNOB
Control the frequency of the sub-frequency within the range of 50Hz to 500Hz.

PANEL CONTROLS AND FEATURES

F. REAR HIGH-PASS/LOW-PASS CROSSOVER FREQUENCY KNOB
Control the frequency of the sub-frequency within the range of 50Hz to 500Hz.

G. REAR CHANNEL CROSSOVER CONTROL
High pass/low pass/full frequency selector switch.

H. REAR CHANNEL GAIN CONTROL
Gain control matches the sensitivity of the power amplifier to the source signal voltage.

I. POWER AND PROTECTION INDICATORS
If the power amplifier fails, the protective red LED will illuminate. Before reconnecting the power amplifier, disconnect the power amplifier and resolve the fault.The power indicator blue LED is lit when the power amplifier is operating normally.

J. SPEAKER CONNECTIONS
Connect the speakers to the output terminals to ensure correct polarity when connected. Never connect the speaker cable to chassis ground.

K. +12V POWER SUPPLY
Connect this terminal to the positive terminal of the vehicle battery or the positive terminal of the isolated audio system battery via a fuse or circuit breaker.

L. REM(ON/OFF)CONTROL LINE
The power amplifier REM-IN should be connected to the REM-OUT of the source unit. the source unit will control the power amplifier to switch on or off automatically.

M. GND (-) GROUND CONNECTION
Connect this terminal directly to the metal frame of the vehicle, making sure that all paint on the metal frame is stripped to bare metal. Use the shortest distance possible. It is best to connect the vehicle battery ground terminal or any other factory grounding point.

INTERFERENCE

All cables can create interference. The power cable and RCA audio cables are very prone to interference from other sources, while remote cables are less prone. Interference is often caused by the generator, ignition, or any other electronic parts or systems. Most of these problems can be eliminated by correct and careful wiring during setup. Here are some guidelines to follow.

• Use only a shielded audio cable for the wiring between the low level input of the amplifier and the RCA output of the radio.

• Lay the signal, speaker and power cables separately with enough distance from one another and also from each other car cable. Ir not possible, you can lay the circuit and ground cable together with the serial cables. Audio and speaker cable should be as far away from these as possible. The REM cable to the automatic antenna output of the radio can be laid together with the signal cables.

• Avoid ground loops by laying the ground wiring of all components towards a central point in a star layout. You can locate fne best point by measuring the voltage directly at the battery, and comparing the voltage value with the chosen ground point and the positive terminal of the amplifier. If the measured voltage is only slightly different, you've found the correct central location. Other wise please look for another point. You should measure with the ignition point
for earth switched on.

• If there are pickups from external electrical sources into the speaker cables, divide the core leads and twist them together.

• If there are noises from the car electrics, add an interference suppression choke into the power wiring.

• If there are humming noises, use thicker ground cables or add further ground cables to the chassis.

• To reduce contact resistance and bad and loose contacts, please solder the cable ends or use multi core cable ends, spade terminals or others. Gold Plated spade terminal are free of corrosion and have the lowest contact resistance.

• Should all these measures not bring about any success, the use of a ground loop isolator may solve the problem.

TROUBLESHOOTING

If you experience operation or performance problems with this product, compare your installation with the electrical wiring diagram on the previous pages.If problems persist, read the following troubleshooting tips which may help eliminate the problems.

SYMPTOM	POSSIBLE CAUSE	ACTION TO TAKE
NO OUTPUT	•Low or no remote turn-on input	•Check remote turn-on voltage output at amplifier and correct as needed
	•Fuse blown	•Check power wire integrity and reversed polarity, repair as needed and replace fuse
	•Power wires not connected	•Check power wire and ground connections and repair of replace as needed
	•Audio input not connected or no output from source	•Check input connections and signal integrity, repair or repalce as needed
	•Speaker wires not connected	•Check speaker wires and repair or replace as needed
AUDIO CYCLES ON AND OFF	•Speaker are blown	•Check system with known working speaker and repair or replace speaker as needed
	•Thermal protection engages when amplifier heat sink temperature exceeds 90℃	•Make sure there is proper ventilation for amplifier and improve ventilation as needed
	•Loose or poor audio input	•Check input connections and repair or replace as needed
DISTORTED OUTPUT	•Amplifier lecel sensitivity set too high; exceeding maximum output capability of amplifier	•Reset gain referring to the turning section of the manual for detailed instructions
	•Impedance load to amplifier too low	•Check speaker impedance load, if below 2Ω stereo or 4Ω mono rewire speakers to achieve a higher impedance
	•Shorted speaker wires	•Check speaker wire connecrions and repair or replace as needed
	•Speaker not connected to amplifier properly	•Check speaker wiring and repair of replace as needed refer to the installation section of this manual for detailed instructions
	•Internal crossover not set properly for speaker	•Reset crossovers referring to the multi-cross crossover configuration section of this manual
DISTORTED OUTPUT (CONT'D)	•Speaker are blown	•Check system with known working speaker and repair or replace as needed
POOR BASS RESPONSE	•Speaker wired wrong polarity causing cancellation at low frequencies	•Check speaker polarity and repair as needed Reset crossovers referring to the multi-cross
	•Crossover set incorrectly	•Crossover configuration secrion of this manual for detailed instructions
DISTORTED OUTPUT (CONT'D)	•Impedance load to amplifier too low	•Check speaker impedance load, if below 2Ω stereo or 4Ω mono rewire speaker to achieve a higher impedance
	•Short in power wire or incorrect power connections	•Check power and ground connections and repair as needed
	•Fuse used is smaller than recommended	•Replace with proper fuse size
	•Too much current being drawn	•Check speaker impedance load, if below 2Ω stereo or 4Ω mono rewire speaker to achieve a higher impedance
	•Short in power wire of incorrect	•Check power and ground connections and repair as needed

介紹

感謝你的購買，歡迎來到Nakamichi！為了享受我們提供的更好的服務，請妥善保管原始發票。你最好將副本發回Nakamichi的指定服務代理商，以便獲得更多技術支持。

配件清单

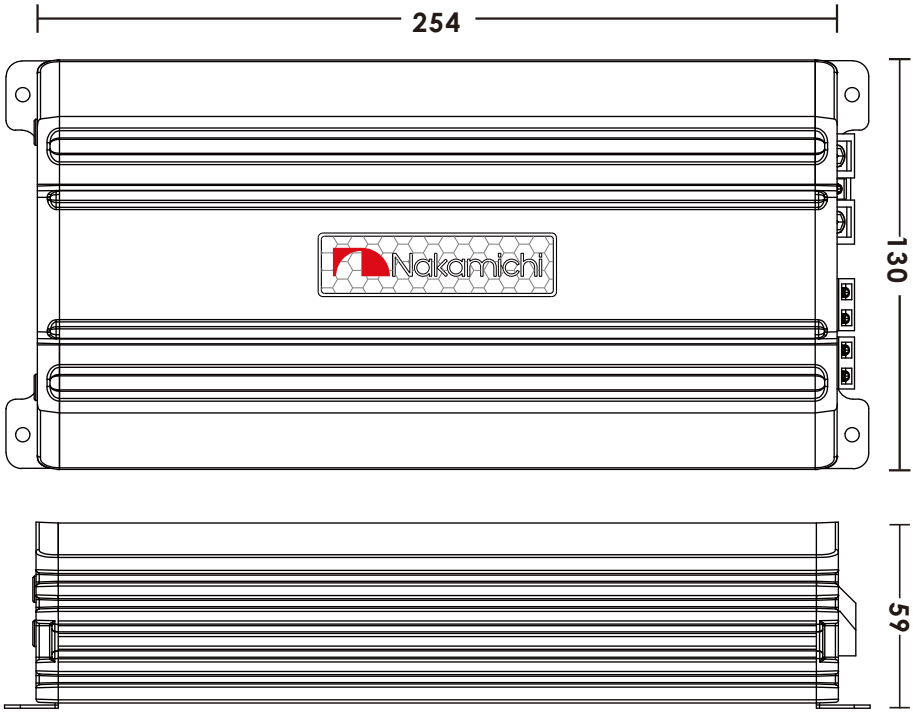
1. 用戶手冊	1本
2. 功率放大器	1臺
3. 安裝螺絲(Φ4 x 15mm)	4個
4. 扳手	2個
5. 高輸入綫	2條

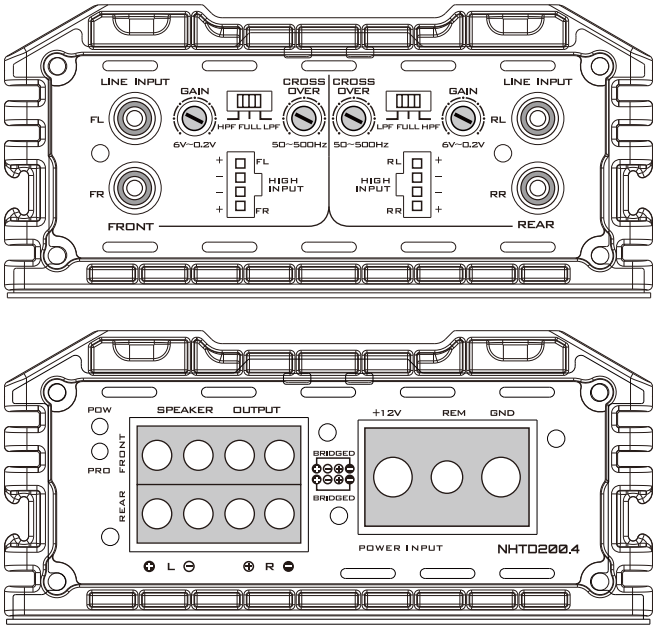
產品規格

輸出功率@4Ω	200W X 4
輸出功率@2Ω	300W X 4
輸出功率@4Ω(橋接)	600W X 2
最大功率	5600W
總諧波失真	≤0.1%
頻率響應	20Hz-20kHz
信噪比	≥85dB
靈敏度	0.2~6V
機器尺寸(長x寬x高)	254x130x59mm
機器淨重	約2.28kg
盒子尺寸(長x寬x高)	329x200x88mm
機器毛重	約2.51kg

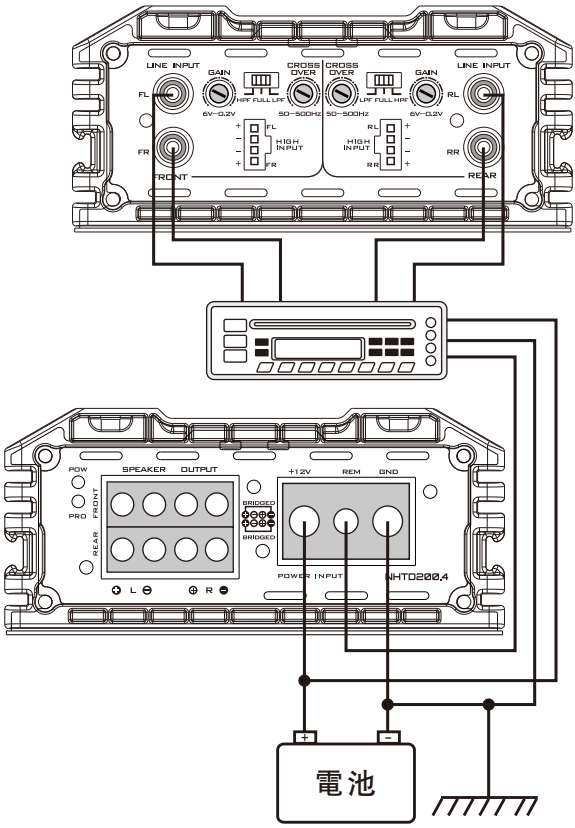
所有規格如有變更，恕不另行通知

尺寸：（單位MM）


254
130
59
Nakamichi


LINE INPUT
GAIN
CROSS OVER
CROSS OVER
GAIN
LINE INPUT
FL
FR
RL
RR
HPF FULL LPF
LPF FULL HPF
6V~0.2V
6V~0.2V
50~500Hz
50~500Hz
HIGH INPUT
HIGH INPUT
FRONT
REAR
POW
PRO
SPEAKER OUTPUT
FRONT
REAR
BRIDGED
BRIDGED
+12V
REM
GND
POWER INPUT
NHTD200.4
L
R

電源線連接



關於電池的註意事項

僅在連接所有其他導線後，才可連接+12V電源輸入導線。確保將設備的接地線牢固地連接到汽車的金屬部分。連接斷開可能會導致放大器故障。

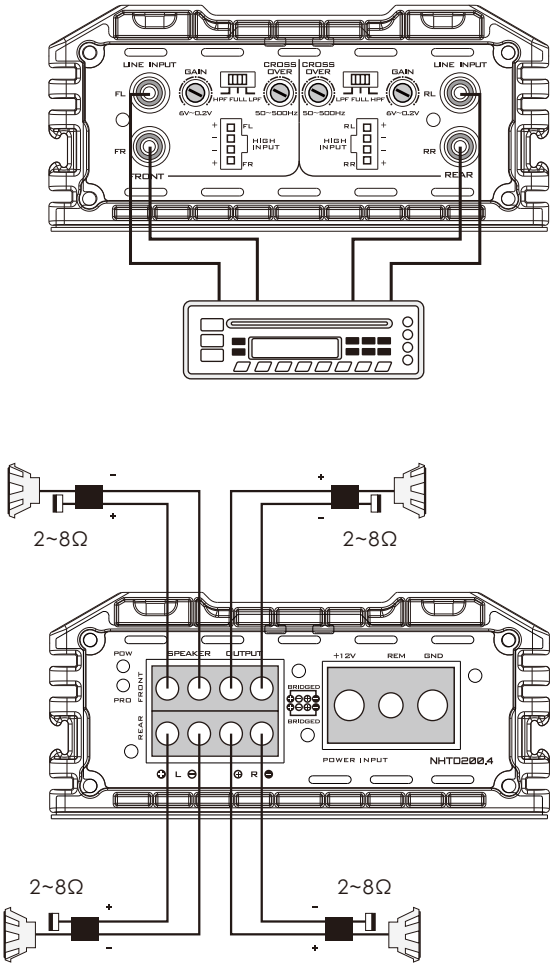
控制綫:

通過在這個端子上施加+12V的電壓來打開設備。該端子不會像兩個電源端子那樣消耗大電流，因此可以使用較細的連接線。標準18號綫很好，標准顏色是藍色。

電聲連接綫

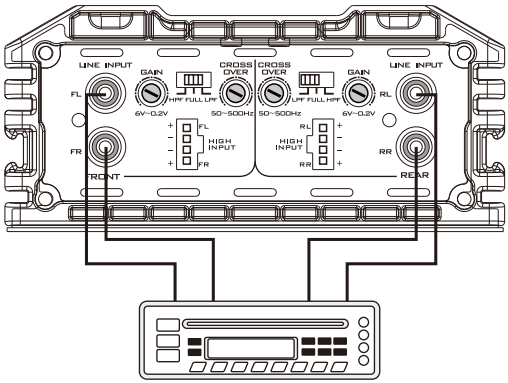
請使用附帶保險絲的電源線，其規格應與原始保險絲相同。將保險絲放置在電源線中，使其盡可能靠近汽車電池。
在全功率運行期間，最大電流將流經系統，因此，確保分別連接到本機的+12V和GND端子的導線必須大於8號綫。

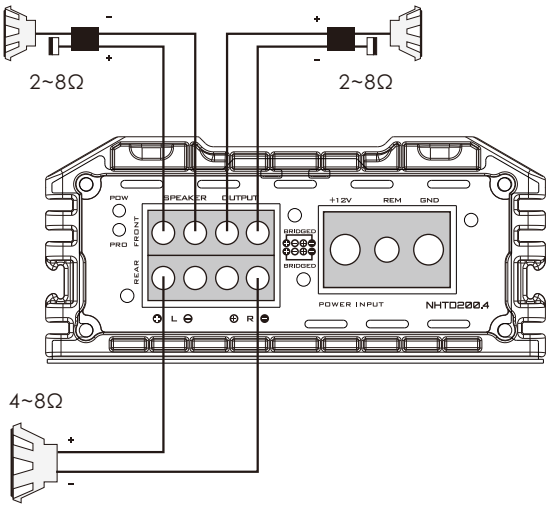
連接1:4聲道模式



電聲連接綫

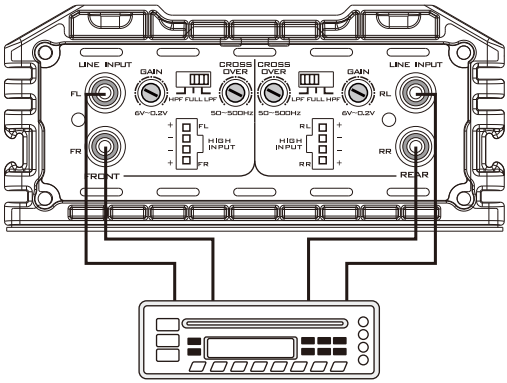
連接2:3聲道模式

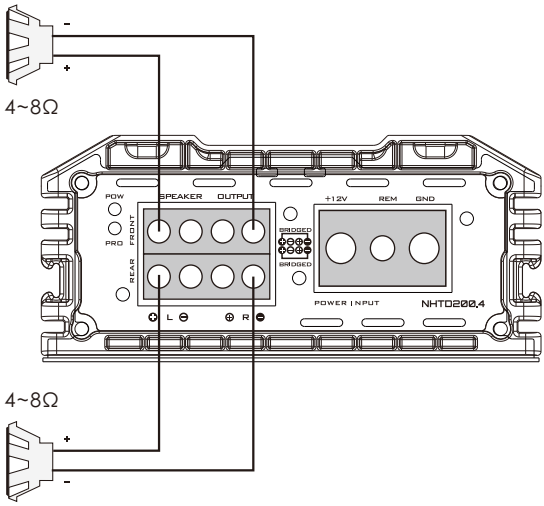




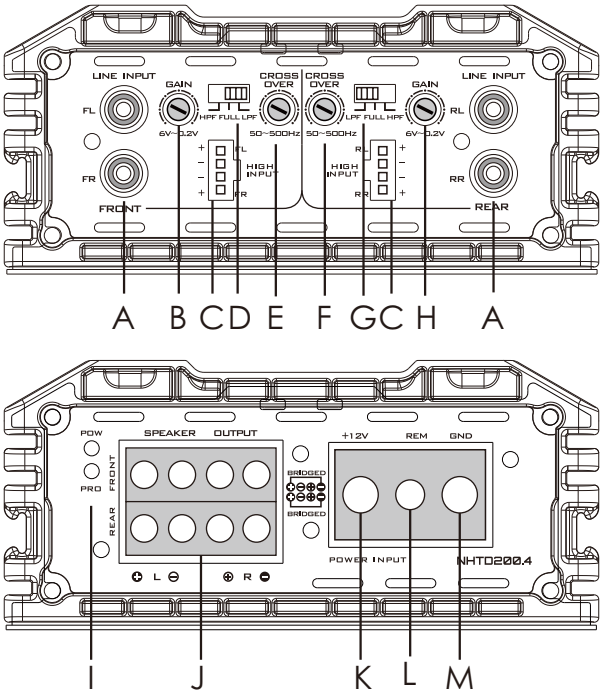
電聲連接綫

連接3:2聲道橋接模式





面板控件和功能



A.低電平RCA輸入
這些RCA輸入插孔與音源單元RCA低電平輸出相連。

B.前置通道增益控制
增益控制使功率放大器的靈敏度與源信號電壓匹配

C.高電平輸入
这些高电平输入线插孔与源单元扬声器高电平输出相连。建议使用高质量双绞线汽车音频电线，以减少音频信号衰减的可能性。

D.前置通道分頻控制
高通/低通/全頻選擇開關

E.前置高通/低通分頻頻率調節
將分頻頻率控制在50Hz-500Hz之間

面板控件和功能

F.后置高通/低通分頻頻率調節
將分頻頻率控制在50Hz-500Hz之間

G.后置通道分頻控制
高通/低通/全頻選擇開關

H.后置通道增益控制
增益控制使功率放大器的靈敏度與源信號電壓匹配

I.電源和保護指示燈
如果功率放大器出現故障，保護紅色LED燈將點亮。重新連接功率放大器前，請先斷開功率放大器的連接綫并解决故障。功率放大器正常工作時，電源指示燈藍色LED點亮。

J.揚聲器連接
將揚聲器連接到輸出接綫端子，以確保連接時極性正確。切勿將揚聲器電纜連接到機箱接地。

K.+12V 電源
通過保險絲或電路斷路器將該端子連接到車輛電池的正極或隔離音頻系統電池的正極。

L.REM(ON/OFF) 控制綫
功率放大器REM-IN應該連接到源單元的REM-OUT。源單元將控制功率放大器自動打開或關閉。

M.GND(-) 地綫連接
將此端子直接連接到車輛的金屬框架，確保金屬框架上的所有油漆都剥離到裸金屬上。使用盡可能短的距離。最好接在車輛電池接地端子或任何其他接地點。

幹擾問題

所有電纜都會產生幹擾。電源線和RCA音頻線很容易受到其他來源的幹擾，而遠程線則不太容易受到幹擾。 幹擾通常是由發電機，點火器或任何其他電子零件或系統引起的。通過在安裝過程中正確和仔細的接線，可以消除大多數這些問題。以下是壹些要遵循的準則。

● 在放大器的低電平輸入與收音機的RCA輸出之間的布線僅可使用屏蔽音頻電纜。

● 分開鋪設信號線，揚聲器線和電源線，彼此之間以及與汽車電纜之間要保持足夠的距離。若不可行的話， 您可以將電路和接地電纜與串行電纜壹起鋪設。音頻和揚聲器電纜應盡可能遠離它們。可以將到無線電的自動天線輸出的REM電纜與信號電纜放在壹起。

● 通過將所有組件的接地線朝向星形布局的中心點來避免接地回路。您可以通過直接在電池上測量電壓並將電壓值與所選接地點和放大器的正極端子進行比較來找到最佳點。如果測得的電壓僅稍有不同，則您已找到正確的中心位置。否則請尋找另壹點。妳應該用點火點測量用於接地。

● 如果揚聲器電源線中有來自外部電源的拾音器，請分開芯線並將其絞合在壹起。

● 如果汽車電氣產生噪音，請在電源線中加入壹個幹擾抑制扼流圈。

● 如果有嗡嗡聲，請使用較粗的接地電纜或將更多的接地電纜添加到機箱。

● 為降低接觸電阻和不良接觸，請焊接電纜末端或使用多芯電纜末端，鏟形端子或其他。鍍金鏟形端子無腐蝕，接觸電阻最低。

● 如果所有這些措施都不能成功，則使用接地回路隔離器可以解決問題。

故障排除

遇見操作或性能上的問題，如果前面的介紹和說明未能幫到妳成功解決，請閱讀下面的故障排除技巧，希望能幫助妳解決問題。

故障現象	故障原因	解決方法
沒有輸出	• 遙控開啟輸入低或沒有開啟	• 檢查功放機遙控的電壓開啟輸出，並根據需要進行校正
	• 保險絲熔斷	• 檢查電源線的完整性和極性是否反轉，根據需要進行維修並更換保險絲
	• 電源線未連接	• 檢查電源線和接地連接，根據需要進行更換或維修
	• 音頻輸入未連接或音源沒有輸出	• 檢查輸入連接和信號完整性，根據需要進行維修或更換
	• 揚聲器導線未連接	• 檢查揚聲器電線並根據需要進行維修或更換
音頻循環開啟和關閉	• 揚聲器壞了	• 檢查已知工作揚聲器，並根據需要修理或更換揚聲器
	• 當功放機散熱片溫度超過90°C時，過熱保護接合	• 確保功放機有適當的通風，並根據需要改善機器通風
	• 音頻輸入松動或不良	• 檢查輸入連接並根據需要進行維修或更換
輸出不正常	• 功放機電平靈敏度設置得太高，超過功放機的最大輸出	• 有關詳細說明，請參閱本手冊的調諧部分重置增益
	• 功放機的阻抗負載太低	• 檢查揚聲器阻抗負載，如果低於2Ω立體聲或4Ω單聲道重新接線揚聲器，以實現更高的阻抗
	• 喇叭線短路	• 檢查揚聲器導線連接並根據需要進行維修或更換
	• 揚聲器未正確連接到功放機	• 根據需要檢查揚聲器接線和更換維修，請參閱本手冊的安裝部分以獲取詳細說明
	• 揚聲器內置分頻器未正確連接	• 參考本說明書線路連接部分的多種連接方式，並重新連接揚聲器
連續輸出不正常	• 揚聲器壞了	• 檢查已知工作揚聲器的系統，並根據需要進行維修或更換
	• 功放機的阻抗負載太低	• 檢查揚聲器阻抗負載，如果低於2Ω立體聲或4Ω單聲道重新接線揚聲器，以實現更高的阻抗
	• 電源線短路或電源連接不正確	• 檢查電源和接地連接並根據需要進行維修
	• 使用的保險絲小於推薦值	• 更換適當的保險絲尺寸
	• 電流太大了	• 檢查揚聲器阻抗負載，如果低於2Ω立體聲或4Ω單聲道重新接線揚聲器，以實現更高的阻抗
	• 電源線不正確鏈接導致短路	• 檢查電源和接地連接並根據需要進行維修
低音反應差	• 揚聲器接線錯誤，導致低頻消除	• 檢查揚聲器極性並根據需要進行修理
	• 交叉設置不正確	• 參考本說明書更詳細的線路連接部分，並重新連接揚聲器

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