KAC-HQR9400

4/3 CHANNEL POWER AMPLIFIER **INSTRUCTION MANUAL** 4/3 声道功率放大器 使用说明书

JVCKENWOOD Corporation

A WARNING

To prevent injury or fire, take the following

Safety precautions

- Mounting and wiring this product requires skills and experience. For safety's sake, leave the mounting and
- wiring work to professionals When extending the ignition, battery, or ground wires, make sure to use automotive-grade wires or other wires
- with the range of 5 mm² (AWG 10) or more to prevent wire deterioration and damage to the wire coating. • To prevent a short circuit, never put or leave any metallic
- objects (such as coins or metal tools) inside the unit. • If the unit starts to emit smoke or strange smells, turn off the power immediately and consult your Kenwood
- Do not touch the unit during use because the surface of the unit becomes hot and may cause burns if touched.

▲ CAUTION

To prevent damage to the machine, take the following

- Be sure the unit is connected to a 12V DC power supply with a negative ground connection.
- Do not open the top or bottom covers of the unit. • Do not install the unit in a spot exposed to direct sunlight or excessive heat or humidity. Also avoid places
- with too much dust or the possibility of water splashing. • When replacing a fuse, only use a new one with the prescribed rating. Using a fuse with the wrong rating
- may cause your unit to malfunction. • To prevent a short circuit when replacing a fuse, first disconnect the wiring harness.

NOTE

- If you experience problems during installation, consult your Kenwood dealer
- If the unit does not seem to be working right, consult your Kenwood dealer.

Cleaning the unit

If the front panel gets dirty, turn off the power and wipe the panel with a dry silicon cloth or soft cloth.

▲ CAUTION

Do not wipe the panel with a hard cloth or a cloth dampened by volatile solvents such as paint thinner and alcohol. They can scratch the surface of the panel and/or cause the indicator letters to peel off.

To prevent battery rise

When the unit is used in the ACC ON position without turning the engine ON, it depletes the battery. Use it after starting the engine

Protection function

The protection function is activated in the following

This unit is equipped with a protection function for protecting this unit and your speakers from various

- accidents or problems that can occur. When the protection function is triggered, the power
- indicator goes off and the amplifier stops operating. · When a speaker wire may be short-circuited. When a speaker output contacts ground.
- When the unit malfunctions and a DC signal is sent to the speaker output.
- When the internal temperature is high and unit won't

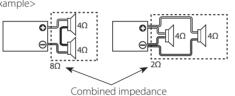
■ Wiring

- Take the battery wire for this unit directly from the battery. If it's connected to the vehicle's wiring harness, it can cause blown fuses etc.
- If a buzzing noise is heard from the speakers when the engine is running, connect a line noise filter (optional) to each of the battery wire.
- Do not allow the wire to directly contact the edge of the iron plate by using Grommets
- Connect the ground wire to a metal part of the car chassis that acts as an electrical ground passing electricity to the battery's negative
 terminal. Do not
- turn the power on if the ground wire is not connected. Be sure to install a protective fuse in the power cord near the battery. The protective fuse should be the same
- capacity as the unit's fuse capacity or somewhat larger. For the power cord and ground, use a vehicle type (fireproof) power wring cord. (Use a power wiring cord with the range of 5 mm² (AWG 10) or more.)
- · When more than one power amplifier are going to be used, use a power supply wiring wire and protective fuse of greater current-handling capacity than the total maximum current drawn by each amplifier.

■ Speaker selection

• Use of speakers having input power ratings that are less than the output power of the amplifier will cause smoke to be emitted as well as damage.

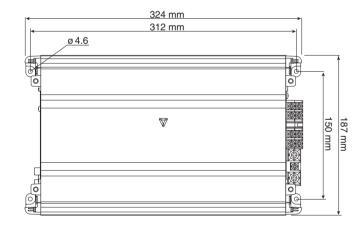
• The impedance of the speakers that are going to be connected should be 2Ω or greater (for stereo connections), or 4Ω or greater (for bridged connections). When more than one set of speakers are going to be used, calculate the combined impedance of the speakers and then connect suitable speakers to the amplifier.

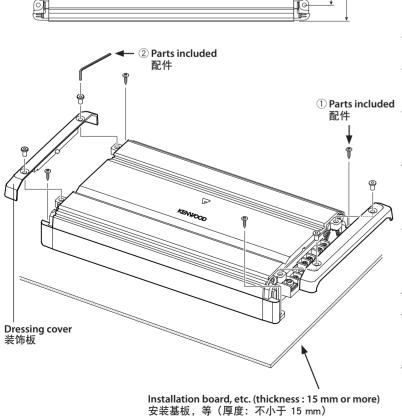


Installation / 安装



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■ Installation procedure

B64-5049-00/00 (MV)

ince there are large variety of settings and nnections possible according to applications, read the instruction manual well to select the proper setting and connection.

- Remove the ignition key and disconnect the negative
 terminal of the battery to prevent
- Set the unit according to the intended usage. Remove the Dressing cover. Connect the input and output wires of the
- Connect the speaker wires. Connect the power wire, power control wire
- and grounding wire following this order.
- Attach the Dressing cover.
- 10. Connect the negative \bigcirc terminal of the

▲ CAUTION

- Do not install in the below locations; (Unstable location, In a location that interferes with driving, In a location that gets wet, In a dusty location, In a place that gets hot, In a place that gets direct sunlight, In a location that gets hit by hot air)
- Do not install the unit under the carpet. Otherwise heat build-up occurs and the unit
- may be damaged.
- Once installed, do not place any object on top The surface temperature of the amplifier will
- become hot during use. Install the amplifier in a place where people, resins, and other substances that are sensitive to heat will not come into contact with it.
- This unit has cooling fan to decrease the internal temperature. Do not mount the unit in a place where the cooling fan and ducts of the unit are blocked. Blocking these openings will inhibit the cooling of the internal temperature and result in malfunction.
- When making a hole under a seat, inside the trunk, or somewhere else in the vehicle, check that there is nothing hazardous on the opposite side such as a gasoline tank, brake pipe, or wiring harness, and be careful not to cause scratches or other damage.
- Do not install near the dashboard, rear tray, or air
- bag safety parts. The installation to the vehicle should securely fasten the unit to a place in which it will not obstruct driving. If the unit comes off due to a shock and hits a person or safety part, it may
- After installing the unit, check to make sure that electrical equipment such as the brake lamps, turn signal lamps and windshield wipers operate

- 根据使用场合的不同,可能有多种不同的连接及设 定方式请务必仔细阅读使用说明书, 选择适当的连
- 拔取点火钥匙,拆掉蓄电池负极⊖端子,以防短
- 根据使用目的,设置本机到妥当位置。
- 连接本机的输入和输出缆线。
- 连接电源线, 电源控制缆线及地线, 不可违反此
- 向本机安装装配部件。
- 9. 装上装饰板
- 10. 连接蓄电池的负极← Install the installation fittings in the unit.

▲ 注意

- (不稳定的位置,妨碍驾驶车辆的位置,潮湿的位置,灰尘较多的位置,受热的位置,阳光直射 的位置, 热气接触的位置)
- 不可将本装置安装在绒毯底下, 否则, 蓄热会导 致本装置损坏。
- , 将本装置安装在热量容易发散的地点。
- 一旦安装完毕,不可在其上放置其它物品。 · 机器使用过程中,机体表面会发热升温。 所以其 安装地点应该是人体, 树脂及其它热敏感物质不
- 易触及的地方。 · 本装置设有冷却风扇用来降低内部温度。 请不要 安装在遮挡冷却风扇和风管的位置。 堵塞通风孔的后果是内部温度升高,引起系统故障。
- 在车座, 行李箱底部或车子其它部位打孔时 应 确认其背面有没有会受到损坏的物件, 诸如油 箱、刹车用配管或线路管套等, 千万不可擦伤或
- 不可安装在驾驶室仪表板,尾部底板或保险气囊

车灯、转向信号灯以及雨刷等操作正常。

- 等部件之上。 · 将本机安装在车内时, 应确保固定牢靠, 且不会 对驾车造成妨碍。如果因为冲击造成本机脱落且
- 撞及人体或保险部件,就会导致伤害或事故。 ·在本装置安装之后,应该确认电气设备,比如刹

安全注意事项

▲ 警告

为了防止受伤和火灾,请遵守下列注意事项。

- 安装本产品和连接导线需要一定的技能和经验。为了保证安 全,应请专业人员完成安装和连接导线作业。
- 当延长蓄电池导线和接地导线时,请使用车辆 用导线或 5mm² (AWG 10) 以上的导线,以防 止导线劣化和被覆面
- · 为了防止短路等事故,请勿将金属物品(硬币,工具等)掉
- · 万一装置冒烟或有异味时,请立即关闭电源,并与建伍经销
- 在使用中请尽量不要接触装置表面。因为装置在使用中表面 发热会烫伤人体。

▲ 注意

为了防止装置发生故障,请遵守下列注意事项,正确操作和

- · 请以负接地线的12V直流电源向本装置供电。 • 请勿打开顶部和底部的盖子
- 请勿将本装置安装在曝露于直射阳光, 高温或高湿, 水可
- 能飞溅的或有灰尘的地方。

 更换保险丝时,请更换规定容量相同的保险丝, 如使用不 同容量的保险丝,可能会造成装置的故障。
- 更换保险丝时,为了防止短路事故,请先拔下电源线束再进

• 安装有困难时,请与建伍经销商洽谈。 • 如果仍不能恢复正常时,请与建伍经销商洽谈。

装置的保养

如果外表污脏时, 请关闭电源, 使用干燥的硅布或柔软的布

请勿使用硬布或涂料稀释剂,酒精等挥发性溶剂,以免损坏 外表面或将所附指示字符擦掉

防止蓄电池全部放电

当本机在ACC ON位置使用而不开动发动机时,将消耗蓄电池 的电量。请在开动了发动机之后使用。

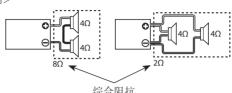
保护功能

- 在以下场合中保护功能被激活
- 本机装有保护功能,可以保护本机以及扬声器不会受到可能 发生的各种意外事故的损害。 当保护功能被触发时, 电源指示灯将熄灭, 放大器也停止工
- 当扬声器缆线短路时。
- 当扬声器的输出接地时。
- · 当本机出现误动作, 有 DC (直流) 信号传送到扬声器输出 • 内部高温不能动作时。

■ 接线

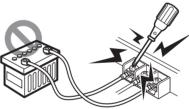
- · 请将本机的蓄电池连接线直接与蓄电池连接。 如果与汽车 的配线束连接,将产生烧毁保险丝等故障。
- 如果发动机运转时从扬声器中发出噪音, 可以在蓄电池的每
- 根连线上加一个线路噪音滤波器 (选购件) 使用保护套,以防缆线直接接触铁板的边缘。
- 将接地线连接到车架的金属部位,车架起到车辆电气接地的作用,将电流传递到蓄电池的负极⊙。如果接地线没有连 接就不要打开电源开关
- 应务必在蓄电池附近的电源连接线上设置保险丝。 保险丝 的规格应该与本机的保险丝容量相同或者略大。
- 对于电源连接线和接地线,请使用汽车用(防火)电源连接线。(请使用截面积为5mm²(AWG 10)或者以上的电源
- · 当使用多个功率放大器时,电源导线的电流容量及保险丝的容量要大于各个放大器的使用电流之和的最大值。

- 如果扬声器的额定功率小于放大器的最大输出功率则会导致 扬声器冒烟以至损坏。
- 所连接的扬声器的阻抗必须为 2 欧姆或更高(立体声连接
- 时):或者4欧姆或更高(桥接连接)。当使用一组扬声器时,必须在计算扬声器的总阻抗之后,再连接合适的扬



Connection / 连接





▲ WARNING Particular attention must be given to making good

electrical contact at the amplifier-output and speaker Poor or loose connections can cause sparking or burning at the terminals because of the very high

power that the amplifier can deliver.

- **A** CAUTION
- · If sound is not output normally, immediately turn power off and check connections.

fuse with one of the same rating.

- Be sure to turn the power off before changing the setting • If the fuse blows, check wires for shorts, then replace the
- · Check that no unconnected wires or connectors are touching the car body. Do not remove caps from unconnected wires or connectors to prevent short

· Connect the speaker wires to appropriate speaker

lamps and windshield wipers work properly.

connectors separately. Sharing the negative wire of the speaker or grounding speaker wires to the metal body of the car can cause this unit to fail. · After installation, check that the brake lamps, turn signal

▲ 警告

要特别注意放大器的输出口和扬声器端子处有良好的电气

因为放大器要发出非常高的功率, 松弛或不良的连接可能

在端子处产生火花甚至燃烧。

- ▲ 注意 • 如果声音输出不正常, 应立即关断电源并检查连接是否正
- · 在变更开关的设定时, 必须首先切断电源。 当保险丝熔断后,要检查缆线是否有短路,并更换上相同 规格的保险丝。
- 检查是否有尚未连接的缆线或与车体相接触的端头。未 连接缆线及其端部的保护帽不可拆掉,以防短路。 扬声器的缆线要分别连接到各自的端子。 共用扬声器的 负极缆线或将扬声器端子接地到汽车的金属部分, 都会导
- 安装之后,请检查汽车的刹车灯、方向指示灯、雨刷等是 否正常动作。

A WARNING

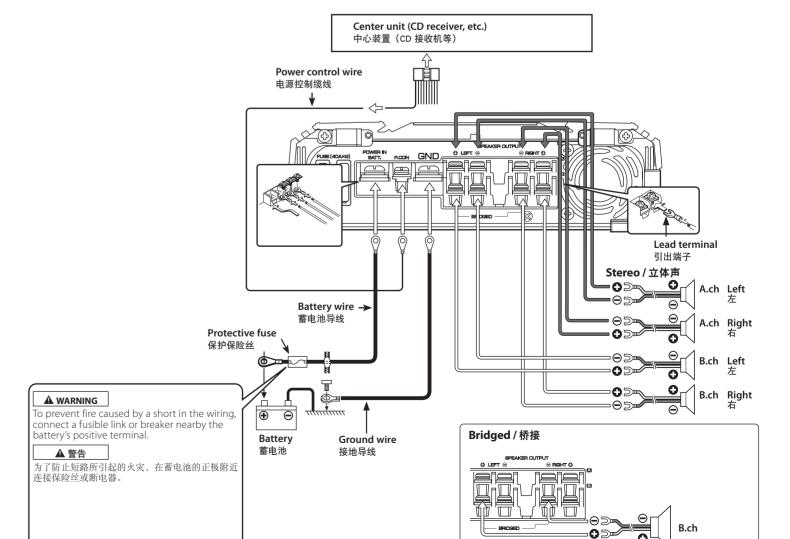
Remove the ignition key and disconnect the negative — terminal of the



拔取点火钥匙,拆掉蓄电池负极⊝端子,以防短路。

battery to prevent short circuits.

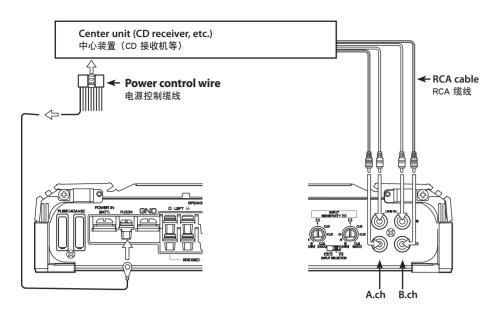
■ Power wire and speaker wire connection ■ 电源线和扬声器线的连接



Connection / 连接

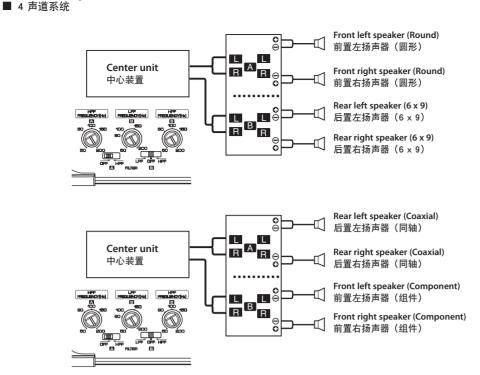
■ RCA cable connections

■ 连接RCA 缆线



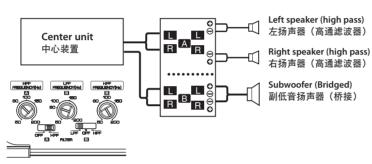
System examples / 系统配置实例

■ 4-channel system



■ 2-channel + Subwoofer system

■ 2 声道 + 副低音扬声器系统



产品中有毒有害物质或元素的名称及含量

	有毒有害物质或元素						
部件名称	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	
安装基板	×	0	0	×	0	0	
框架	×	0	0	×	0	0	
其他 (附件)	×	0	0	×	0	0	

〇:表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T26572-2011 标准规定的限量要求以下。 ×:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T26572-2011 标准规定的限



此图标表示了中国《电子信息产品污染控制管理办法》规定的环保使用期限。 只要用户在使用本产品时遵守注意事项中的各项规定,从制造日期开始到此图标标出 的期限为止(环保使用期限)既不会污染环境也不会产生对人体有害的物质。

· 附件和消耗性零件的环保使用期限如下所示: (不同产品中包含的附件和消耗性零件也不相同。)

电缆类、遥控器、麦克风、天线、蓝牙适配器: 10 年

故障检修

PROBLEM

(Blown fuse.)

(No sound from one

The output level is too

(The sound is distorted.)

small (or too large).

The sound quality is

Troubleshooting guide

POSSIBLE CAUSE

Volume is too high

the car body.

The speaker cord is shorted.

not set to the correct position.

Protection circuit may be activated.

The input sensitivity adjusting control is

The speakers wire are connected with

wrong \bigoplus / \bigoplus polarity. A speaker wire is pinched by a screw in

The switches may be set improperly

有时被认为是故障的现象,其实是因微小的操作或配线失误而造成。 在要求维修之前,请参照下表稍做检查为盼

What might appear to be a malfunction in your unit may just be the result of slight misoperation or miswiring. Before calling service, first check the following table for possible problems.

SOLUTION

Connect the input (or output) cables.

Replace the fuse and use lower volume

cause of the short, replace the fuse.

not pinched by anything. Set switches properly by referring to

of the terminals and wires well.

<System examples>

Adjust the control correctly referring to

· After check the speaker cord and fixing the

Connect them properly checking the ⊕/⊖

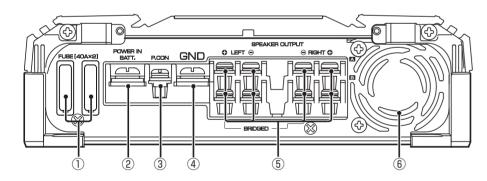
Connect the speaker wire again so that it is

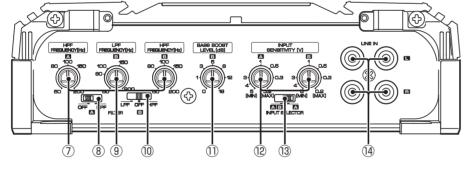
Check connections by referring to

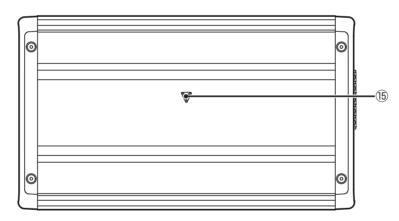
<Protection function>.

现象	原因	排除方法
没有声音	· 输入(或输出)缆线未连接。	・连接输入(或输出)缆线。
(保险丝跳断)	· 保护线路可能被触发。	·参考 <保护功能>一节,检查连接状况。
	・音量过大。	· 请更换保险丝,减小音量。
	· 扬声器电线短路。	· 确认扬声器线,解除短路原因后,更换保险:
输出电平过低(或过高)	· 输入灵敏度调节不当,没有位于妥当位置。	· 调节该控制器。请参考 <控制>。
声音质量很差	· 扬声器缆线的极性⊕/⊝连接错误。	· 请将缆线的极性⊕/⊖连接正确。
(声音失真)	· 扬声器缆线的一根被车体螺钉压迫。	· 重新连接缆线, 使之不再受螺钉压迫。
	· 开关的设定可能不妥。	·请参考 <系统配置实例>,将开关正确设置。

Controls / 控制







This is a 4 channel amplifier including 2 stereo amplifiers in a body. One amplifier is referred to as amplifier A and the other is amplifier B. This unit is compatible with a large variety of systems by

1 Fuse (40 A x 2)

NOTE

consult vour Kenwood dealer.

② Battery terminal (POWER IN BATT.)

③ Power control terminal (P.CON)

Controls the unit ON/OFF.

Controls the unit power. Be sure to connect it with all the

4 Ground terminal (GND)

⑤ SPEAKER OUTPUT terminals (A.ch/B.ch)

Stereo connections: When you wish to use the unit as a stereo amplifier, stereo

connections are used. The speakers to be connected should have an impedance of 2Ω or greater. When multiple speakers are to be connected, ensure that the combined impedance is 2Ω or greater for each channel.

Bridged connections: (B.ch)

When you wish to use the unit as a high-output amplifier, bridged connections are used. (Make connections to the LEFT channel ⊕ and the RIGHT channel ⊖ SPEAKER The speakers to be connected should have an impedance of

4Ω or greater. When multiple speakers are to be connected, ensure that the combined impedance is 4Ω or greater.

6 Cooling fan

7 HPF FREQUENCY control (A.ch/B.ch) This control adjusts the frequency band output from this

8 Filter switch (A.ch) This switch allow filtering of the speaker output signals.

HPF (High Pass Filter) position:

he filter outputs the band of higher frequencies than the frequency set with the "HPF FREQUENCY" control

OFF position: ire bandwidth is output without filtering.

9 LPF FREQUENCY control (B.ch) This control adjusts the frequency band output from this

This switch allow filtering of the speaker output signals. HPF (High Pass Filter) position:

The filter outputs the band of higher frequencies than the frequency set with the "HPF FREQUENCY" control. • LPF (Low-Pass Filter) position:

The filter outputs the band of lower frequencies than the frequency set with the "LPF FREQUENCY" control. OFF position:

The entire bandwidth is output without filtering. 1) BASS BOOST LEVEL control (B.ch)

Sets the low frequency level to be compensated. 12 INPUT SENSITIVITY control (A.ch/B.ch) Set this control according to the pre-output level of the

center unit connected with this unit.

NOTE For the pre-output level, refer to the <Specifications> in the

instruction manual of the center unit.

13 INPUT SELECTOR switch This switch selects the input method of the signals to be

• A B position:

amplified by amplifiers A and B.

Amplifies both of the signals input to amplifiers A and B.

A position: Amplifies only signal input amplifier A with both amplifiers

(4) LINE IN terminal (A.ch/B.ch)

15 Power indicator When the power is turned on, the Power indicator lights.

器之中一个称为A,另一个则称为B。如下所记,可以对应 开关切换操作及各种功能组合系统。

① 保险丝 (40 A x 2)

② POWER IN BATT. (蓄电池) 端子

③ P.CON(电源控制)端子 控制本机的接通/关闭。

注 控制本机电源。 应务必与全部系统连接。

④ GND (接地) 端子

⑤ SPEAKER OUTPUT (扬声器输出) 端子 (A.ch/B.ch)

• 立体声连接端子: 当您希望本机作为立体声放大器时,必须使用立体声连接端

桥接连接端子: (B.ch) 当您希望本机作为大功率放大器使用时,可以进行桥接连接。 ⑭ LINE IN (线输入)端子 (A.ch/B.ch) (连接LEFT声道 ⊕、RIGHT声道 ⊖ 及SPEAKER OUTPUT 端 15 电源指示灯

··· 所连接的扬声器的阻抗必须为 4 欧姆或更高。 当多个扬声器 被连接时,必须保证每声道的综合阻抗大于或等于4欧姆。

⑦ HPF FREQUENCY (高通滤波频率) 控制 (A.ch/B.ch) 可以调节本机的输出频带。

⑧ FILTER (滤波器) 开关 (A.ch)

• HPF(高通滤波器)位置: 滤波器将输出高于 "HPF FREQUENCY"控制设定值的波段。 OFF(关闭)位置:

滤波器将不进行任何滤波处理,输出整个波段。 ⑨ LPF FREQUENCY (低通滤波频率) 控制 (B.ch) 可以调节本机的输出频带。

• HPF(高通滤波器)位置: 滤波器将输出高于 "HPF FREQUENCY"控制设定值的波段。 • LPF (低通滤波器) 位置:

滤波器将输出低于 "LPF FREQUENCY"控制设定值的波段。
OFF (关闭) 位置: 滤波器将不进行任何滤波处理,输出整个波段。 ① BASS BOOST LEVEL(低音提升)控制 (B.ch)

⑫ INPUT SENSITIVITY (输入灵敏度) 控制 (A.ch/B.ch) 根据与本放大器连接的中心装置的前置输出电平调节本控制

关于中心装置的前置输出电平, 请参考其使用说明书。 ① INPUT SELECTOR (输入选择) 开关

本开关可以选择被放大器 A 和 B 处理的信号的输入方法。

使用A、B 放大器处理输入到放大器 A 的信号。

当电源打开时,电源指示灯点亮。

Specifications

Input sensitivity (RCA).... Signal to noise ratio..... nput impedance..

Specifications subject to change without notice.
Audio section
Rated power output (+B = 14.4V) Stereo (4 Ω)
60 W × 2 (20 Hz − 20 kHz, ≤ 0.05 % THD, Ac
100 W × 2 (20 Hz − 20 kHz, ≤ 0.05 % THD, Bo
Stereo (2 Ω)
150 W × 2 (1 kHz, ≤ 0.5 % THD, Bo
3 speakers60 W × 2 (20 Hz − 20 kHz, \leq 0.08 % THD, 4 Ω
300 W (1 kHz, ≤ 1.0 % THD, Bridged 4 Ω , SU
Speaker impedance4 Ω (2 Ω to 8 Ω allowab
(Bridged connection: 4 Ω to 8 Ω allowab
Frequency response (+0, -3 dB) 5 Hz - 50 k

Low pass filter frequency (-24 dB/oct.) (B channel) ..50 Hz – 200 Hz (variable) High pass filter frequency (-12 dB/oct.)

..50 Hz – 200 Hz (variable) Ch) Bass Boost Control (40 Hz) (B channel)..0 – +18 dB (variable)

Operating voltage.... ... 14.4 V (11 – 16 V allowable) .5 Hz - 50 kHz Current consumption 0.2 V - 5.0 V Dimensions (W \times H \times D).....

规格可能会变更, 恕不另行通知。 音频部

目 妙 印
额定输出功率 (+B = 14.4V)
立体声 (4 Ω)
100 W \times 2 (20 Hz - 20 kHz, \leq 0.05 % THD, Bch)
立体声 (2 Ω)
3 扬声器
60 W $ imes$ 2 (20 Hz – 20 kHz, \leq 0.08 % THD, 4 Ω) +
300 W (1 kHz, ≤ 1.0 % THD, 桥接 4 Ω, SUB)
扬声器阻抗4 Ω (2 Ω - 8 Ω允许)
(桥接连接: 4 Ω - 8 Ω 允许)
频率响应 (+0, -3 dB)5 Hz - 50 kHz
灵敏度 (RCA)
信噪比100 dB

低通滤波器过滤频率 (-24 dB/oct.) (B声道) 高通滤波器过滤频率 (-12 dB/oct.)......50 Hz - 200 Hz (可变) 低音增强控制(40 Hz / B声道).....0-+18 dB (可变) . 14.4 V (允许11 - 16 V) 使用电压

.....324 × 55 × 187 mm

消耗电流

重量..

安装尺寸(宽×高×深)......