

Stereo Power Amplifier

Усилитель

Стереο підсилювач

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For customers in the United States:
The warranty for this product is included in this manual
(page 12).

Owner's Record

The model and serial numbers are located on the bottom of the unit.
Record the serial number in the space provided below.
Refer to these numbers whenever you call upon your Sony dealer
regarding this product.

Model No. XM-GS4

Serial No. _____



* 4 5 6 9 9 9 8 1 3 * (1)

For safety, be sure to install this unit either inside the trunk (boot) or under a seat. For details, see "Installation and Connections" (page 5).

Made in Thailand

Notice for customers: the following information is only applicable to equipment sold in countries applying EU Directives

Manufacturer: Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

For EU product compliance: Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany



Disposal of waste batteries and electrical and electronic equipment (applicable in the European Union and other European countries with separate collection systems)

This symbol on the product, the battery or on the packaging indicates that the product and the battery shall not be treated as household waste. On certain batteries this symbol might be used in combination with a chemical symbol. The chemical symbols for mercury (Hg) or lead (Pb) are added if the battery contains more than 0.0005% mercury or 0.004% lead.

By ensuring these products and batteries are disposed of correctly, you will help prevent potentially negative consequences for the environment and human health which could otherwise be caused by inappropriate waste handling. The recycling of the materials will help to conserve natural resources.

In case of products that for safety, performance or data integrity reasons require a permanent connection with an incorporated battery, this battery should be replaced by qualified service staff only.

To ensure that the battery and the electrical and electronic equipment will be treated properly, hand over these products at end-of-life to the applicable collection point for the recycling of electrical and electronic equipment.

For all other batteries, please view the section on how to remove the battery from the product safely. Hand the battery over to the applicable collection point for the recycling of waste batteries.

For more detailed information about recycling of this product or battery, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product or battery.



This symbol is intended to alert the user to the presence of a hot surface. The symbol applies to Europe models only.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Features

- Maximum power output of 150 W per channel (at 4 Ω).
- This unit can be used as a bridging amplifier with a maximum output of 350 W.
- Built-in LP (low-pass) filter, HP (high-pass) filter, subsonic filter and Low boost circuit.
- Protection circuit and indicator provided.
- Direct connection can be made with the speaker output of your car audio unit if it is not equipped with the line output (High level input connection).
- Hi-level Sensing Power On feature allows this unit to be activated without the need for REMOTE connection.
- Pulse power supply* for stable and regulated output power.

* **Pulse power supply**

This unit has a built-in power regulator which converts the power supplied by the 12 V DC car battery into high speed pulses using a semiconductor switch. These pulses are stepped up by the built-in pulse transformer and separated into both positive and negative power supplies before being converted into direct current again. This is to regulate fluctuating voltage from the car battery. This light-weight power supply system provides a highly efficient power supply with a low impedance output.

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Additional Information

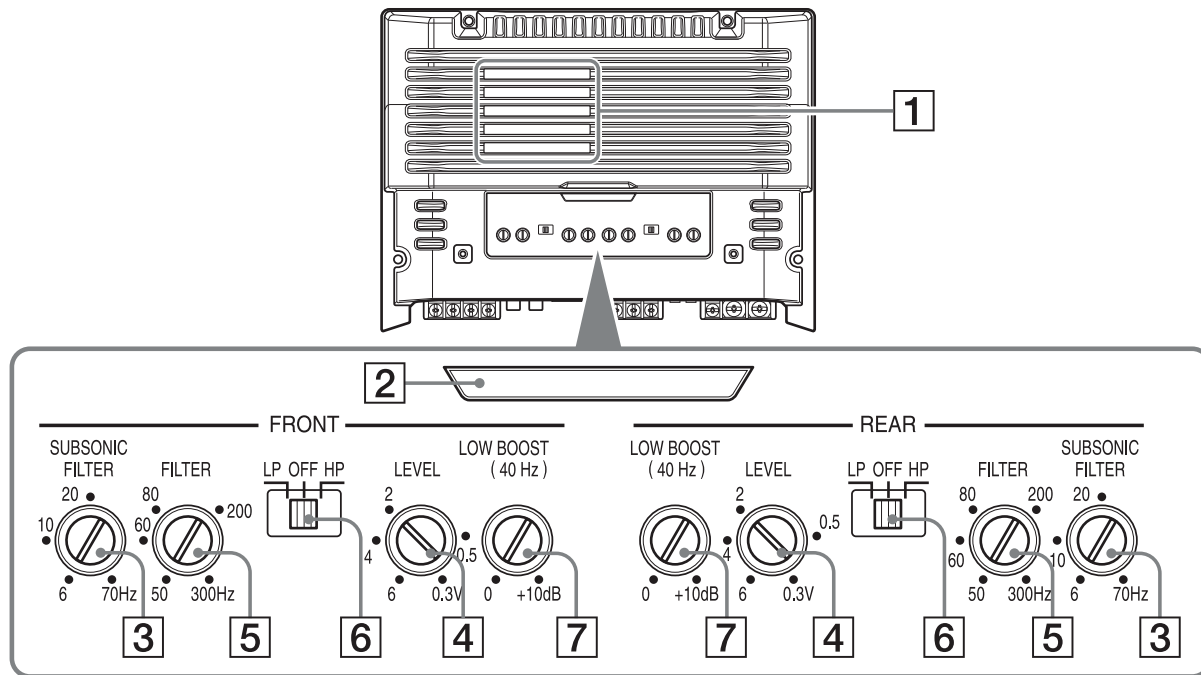
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For customers in the United States:

Important notice

The warranty for this product is included in this manual (page 12). Keep this manual for future use.

Location and Function of Controls



1 Ventilation outlet

Dissipates heat.
Depending on the temperature of the unit, the fan operates in one of three status (stopped, low-speed, high-speed).

2 Illumination indicator

Lights up in white during operation.
If the protection circuit activates, the illumination indicator changes from white to red.
For details, see "Troubleshooting" (page 11).

3 SUBSONIC FILTER adjustment control

Adjusts the cut-off frequency (6 – 70 Hz) for the subsonic filter.

4 LEVEL adjustment control

Adjusts the input level.
Turn it in the clockwise direction when the output level of the car audio unit seems low.

5 Cut-off frequency adjustment control

Adjusts the cut-off frequency (50 – 300 Hz) for the low-pass or high-pass filter.

6 FILTER selector switch

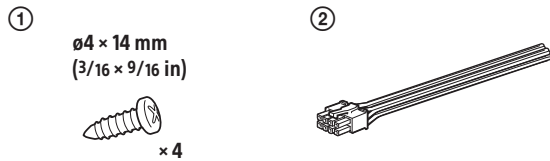
Selects the low-pass filter (LP) or the high-pass filter (HP).

7 LOW BOOST level control

Boosts the frequencies around 40 Hz to a maximum of 10 dB.

Installation and Connections

Parts for Installation and Connections



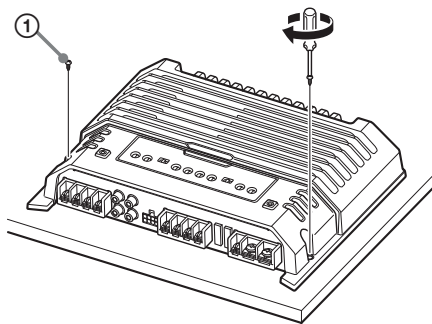
This parts list does not include all the package contents.

Installation

- Mount the unit either inside the trunk (boot) or under a seat.
- Choose the mounting location carefully so the unit will not interfere with the normal movements of the driver and it will not be exposed to direct sunlight or hot air from the heater.
- Do not install the unit under the floor carpet, where the heat dissipation from the unit will be considerably impaired.

Mounting the unit

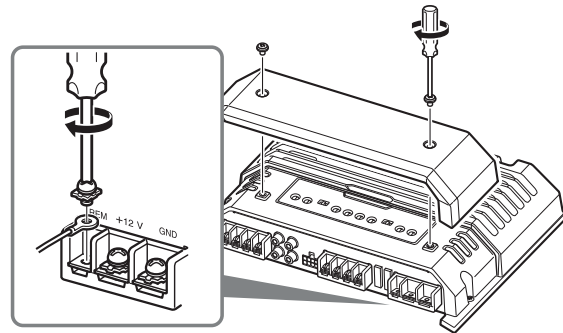
First, place the unit where you plan to install it, and mark the positions of the 4 screw holes on the mounting board (not supplied). Then drill a 3 mm ($1/8 \text{ in}$) pilot hole at each mark and mount the unit onto the board with the supplied mounting screws. The mounting screws are all 14 mm ($9/16 \text{ in}$) long, so make sure that the mounting board is thicker than 14 mm ($9/16 \text{ in}$).



Connections

- Before making any connections, disconnect the ground (earth) terminal of the car battery to avoid short circuits.
- Be sure to use speakers with an adequate power rating. If you use small capacity speakers, they may be damaged.
- This is a Phase-Inverted Amplifier.
- Do not connect the \ominus terminal of the speaker system to the car chassis, and do not connect the \ominus terminal of the right speaker with that of the left speaker.
- Install the input and output cords away from the power supply wire. Running them close together may generate interference noise.
- This unit is a high powered amplifier. Therefore, it may not perform to its full potential if used with the speaker cords supplied with the car.
- If your car is equipped with a computer system for navigation or some other purpose, do not remove the ground (earth) wire from the car battery. If you disconnect the wire, the computer memory may be erased. To avoid short circuits when making connections, disconnect the +12 V power supply wire until all the other wires have been connected.

Making the terminal connections



Note

When you tighten the screw, be careful not to apply too much torque as doing so may damage the screw (the torque value should be less than $1 \text{ N}\cdot\text{m}$).

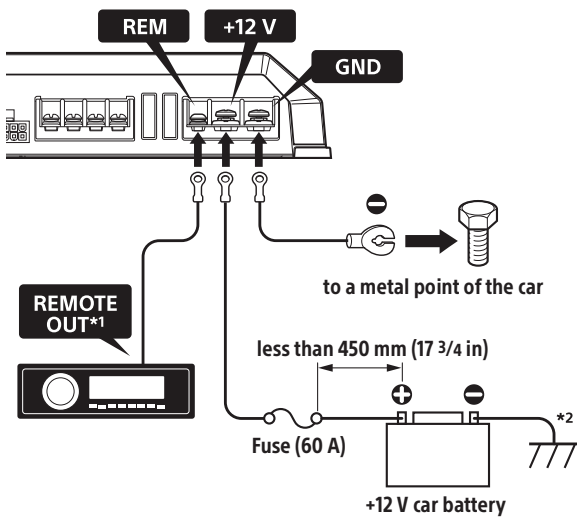
Power Connections

- Connect the +12 V power supply wire only after all the other wires have been connected.
- Be sure to connect the ground (earth) wire of the unit securely to a metal point of the car. A loose connection may cause a malfunction of the amplifier.
- Be sure to connect the remote control wire of the car audio unit to the remote input (REM) terminal.
- When using a car audio unit without a remote output for the amplifier, connect the remote input (REM) terminal to the accessory power supply.

- Use a power supply wire with a fuse (60 A) attached.
- All power wires connected to the positive battery post should be fused within 450 mm (17 3/4 in) of the battery post, and before they pass through any metal.
- Make sure that the car's battery wires connected to the car (ground (earth) to chassis) are of a wire gauge at least equal to that of the main power wire connected from the battery to the amplifier.
- During full-power operation, a current of more than 60 A will run through the system. Therefore, make sure that the wires to be connected to the +12 V and GND terminals of this unit are at least 8-Gauge (AWG-8) or have a sectional area of more than 8 mm² (11/32 in²).

Making power connections

Power connection wires (not supplied) are required.



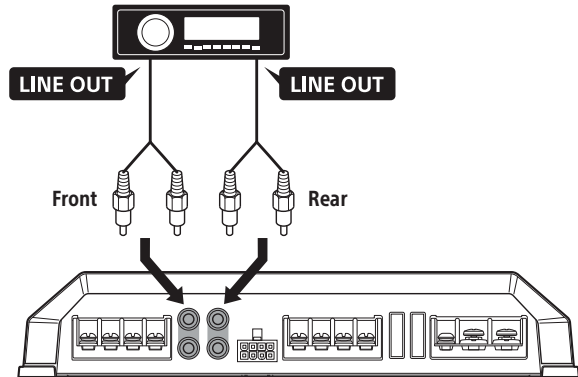
*1 If you have the factory original or some other car audio unit without a remote output for the amplifier, connect the remote input (REM) terminal to the accessory power supply. In High level input connection, the car audio unit can also be activated without need for REMOTE connection. However, this function is not guaranteed for all car audio units.

*2 Ground (earth) to chassis.

Input Connections

A Line input connection

With the speaker connection **1**, **2**, **3** or **4** (page 7, 8)

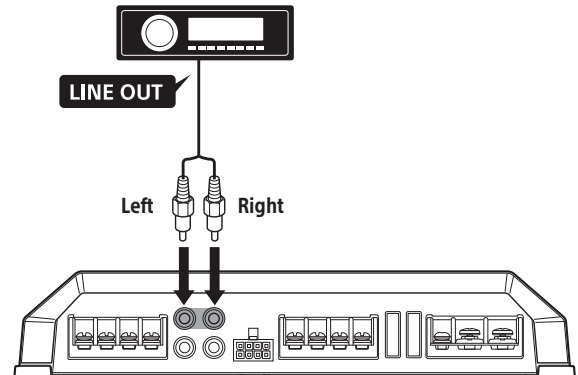


Note

You can enjoy high-resolution sound when this unit is connected to a high-resolution audio supported car audio unit (e.g. RSX-GS9).

B Line input connection

With the speaker connection **5** (page 8)

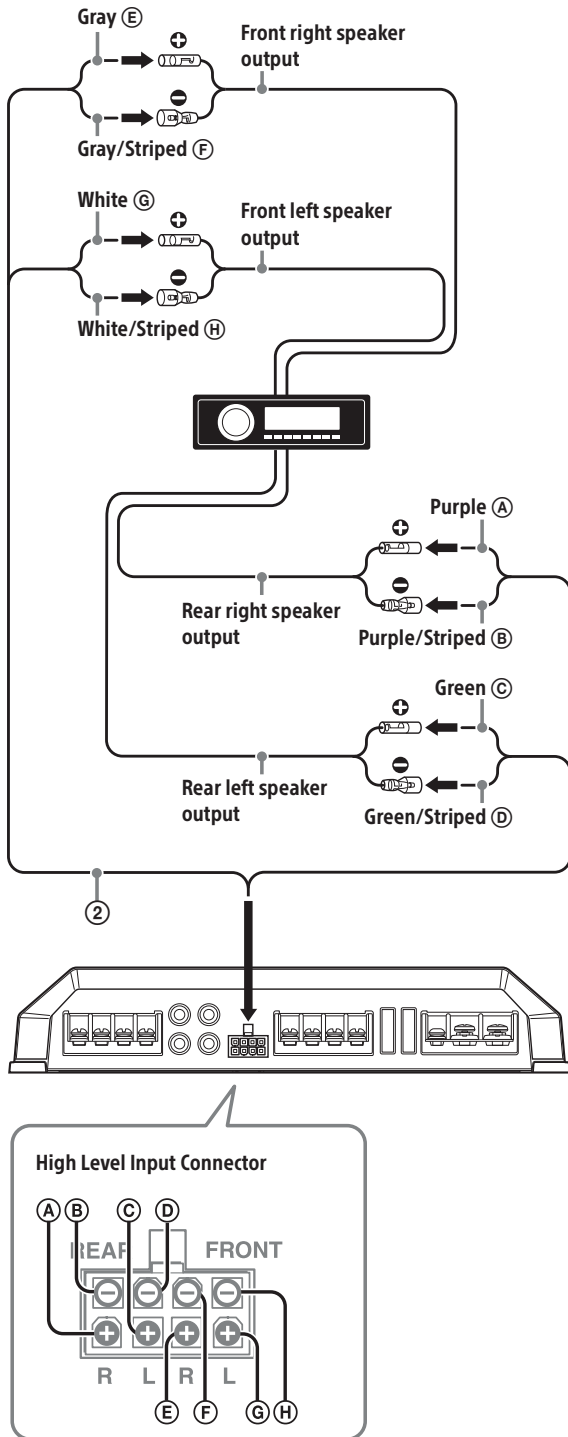


Note

You can enjoy high-resolution sound when this unit is connected to a high-resolution audio supported car audio unit (e.g. RSX-GS9).

C High level input connection

With the speaker connection **1**, **2**, **3** or **4** (page 7, 8)



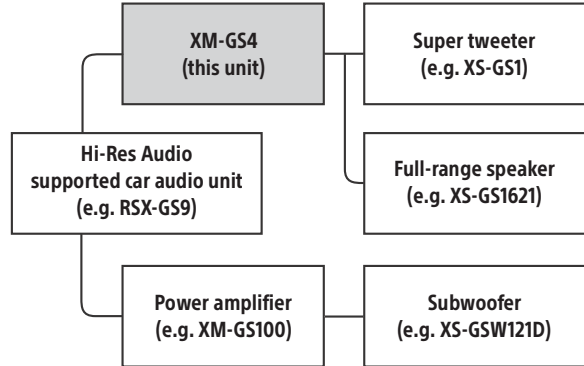
Note

Also, refer to the manual supplied with your car audio unit for further details.

Speaker Connections

Set the FILTER selector switch on the control panel to "HP" (high-pass filter), "LP" (low-pass filter) or "OFF" according to the speaker system. Also, refer to the manual supplied with your speakers for further details.

Recommended high-resolution audio system

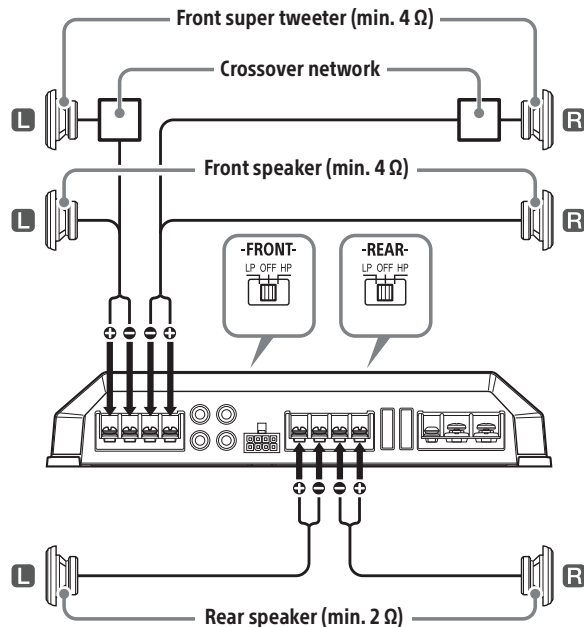


Note

Certain products shown in the diagram may not be available in your country or region.

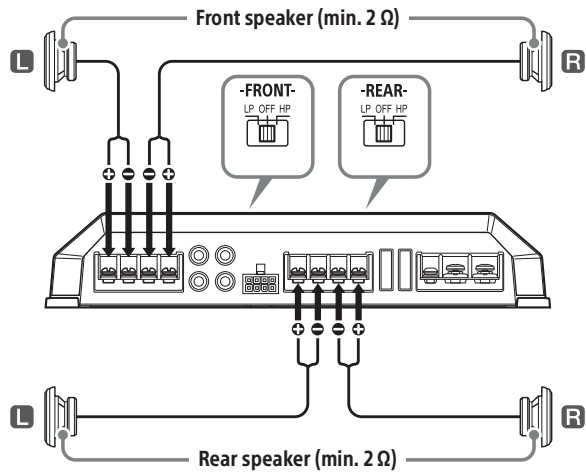
1 6-speaker system (recommended for the high-resolution audio system)

With the input connection **A** or **C** (page 6, 7)



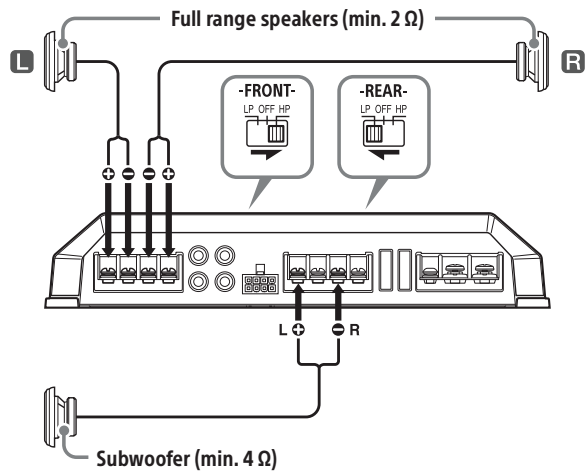
2 4-speaker system

With the input connection **A** or **C** (page 6, 7)



3 3-speaker system

With the input connection **A** or **C** (page 6, 7)

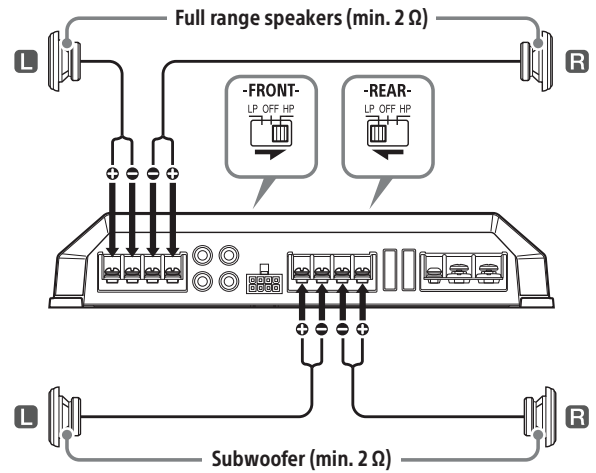


Notes

- In this system, the volume of the subwoofer will be controlled by the car audio unit fader control.
- In this system, the output signals to the subwoofer will be the combination of both the REAR L INPUT and REAR R INPUT jacks or the REAR high level input connector signals.

4 2-way system

With the input connection **A** or **C** (page 6, 7)

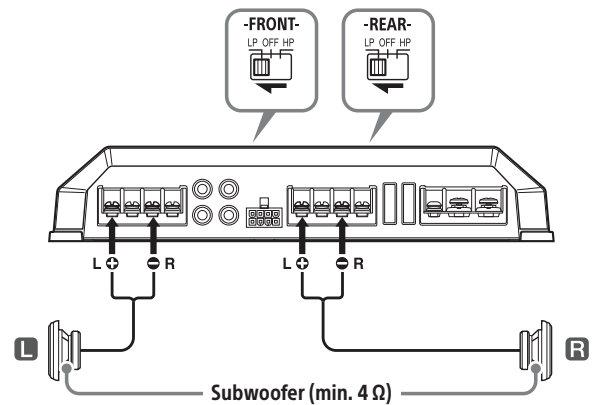


Note

In this system, the volume of the subwoofer will be controlled by the car audio unit fader control.

5 2-subwoofer system

With the input connection **B** (page 6)



Additional Information

Precautions

- This unit is designed for negative ground (earth) 12 V DC operation only.
- Use speakers with an impedance of 2 to 8 Ω (4 to 8 Ω when used as a bridging amplifier).
- Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers.
- Avoid installing the unit in areas subject to:
 - high temperatures such as from direct sunlight or hot air from the heater
 - rain or moisture
 - dust or dirt.
- If your car is parked in direct sunlight and there is a considerable rise in temperature inside the car, allow the unit to cool down before use.
- When installing the unit horizontally, be sure not to cover the fins with the floor carpet, etc.
- If this unit is placed too close to the car audio unit or antenna (aerial), interference may occur. In this case, relocate this unit away from the car audio unit or antenna (aerial).
- If no power is being supplied to the car audio unit, check the connections.
- This power amplifier employs a protection circuit* to protect the transistors and speakers if the amplifier malfunctions. Do not attempt to test the protection circuits by covering the heat sink or connecting improper loads.
- Do not use the unit on a weak battery as its optimum performance depends on a good power supply.
- For safety, keep your car audio unit volume moderate so that you can still hear other sounds.

* Protection circuit

This amplifier is provided with a protection circuit that operates in the following cases:

- when the unit overheats
- when a DC current is generated
- when the speaker terminals are short-circuited.

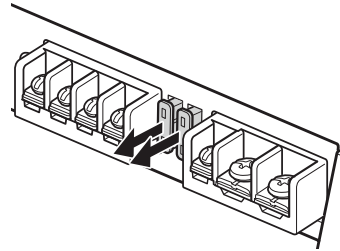
The illumination indicator will change from white to red, and the unit will shut down. If this happens, take out the cassette tape or disc, turn off the connected equipment, and determine the cause of the malfunction. If the unit has overheated, wait until it cools down before use.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Maintenance

Fuse Replacement

When replacing the fuse, be sure to use one matching the amperage stated above the fuse holder. If the fuse blows, check the power connection and replace both the fuses. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.



Warning

Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Specifications

AUDIO POWER SPECIFICATIONS



CEA2006 Standard
Power Output: 70 Watts RMS × 4 at
4 Ohms < 1% THD+N
SN Ratio: 93 dBA
(reference: 1 Watt into 4 Ohms)

Circuit system

OTL (output transformerless) circuit,
Pulse power supply

Inputs

RCA pin jacks,
High level input connector

Input level adjustment range

0.3 – 6 V (RCA pin jacks),
3 – 12 V (High level input)

Outputs

Speaker terminals

Speaker impedance

2 – 8 Ω (stereo),
4 – 8 Ω (when used as a bridging amplifier)

Maximum output

2 Speakers: 350 W × 2 (at 4 Ω)
4 Speakers: 150 W × 4 (at 4 Ω)

Rated output

(supply voltage at 14.4 V, 20 Hz – 20 kHz, 1 %
THD)

2 Speakers: 160 W × 2 (at 4 Ω)
4 Speakers: 80 W × 4 (at 2 Ω),
70 W × 4 (at 4 Ω)

Frequency response

10 Hz – 100 kHz ($+0.5$
 -3.0 dB)

Harmonic distortion

0.05 % or less (at 1 kHz, 4 Ω)

Low-pass filter

50 – 300 Hz, 12 dB/oct

High-pass filter

50 – 300 Hz, 12 dB/oct

Subsonic filter

6 – 70 Hz, 12 dB/oct

Low boost

0 – 10 dB (40 Hz)

Power requirements

12 V DC car battery (negative ground (earth))

Power supply voltage

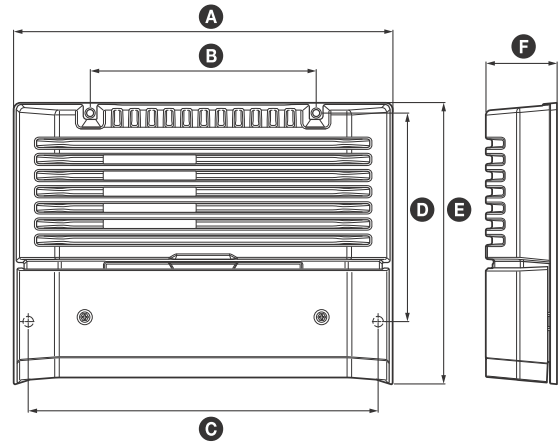
10.5 – 16 V

Current drain

At rated output: 33 A (4 Ω, 70 W × 4)
Remote input: 1 mA

Dimensions

Approx. 272 × 51 × 202 mm (10 3/4 × 2 1/8 × 8 in)
(w/h/d) not incl. projecting parts and controls



A 272 mm (10 3/4 in)

B 162 mm (6 1/2 in)

C 251 mm (10 in)

D 149.5 mm (6 in)

E 202 mm (8 in)

F 51 mm (2 1/8 in)

Mass

Approx. 2.7 kg (6 lb) not incl. accessories

Package contents:

Main unit (1)
Mounting screws (4)
High level input cord (1)

Your dealer may not handle some of the above
listed accessories. Please ask the dealer for detailed
information.

Design and specifications are subject to change
without notice.

Troubleshooting

The following checklist will assist in the correction of most problems which you may encounter with your unit. Before going through the checklist below, refer to the connection and operating procedures.

The illumination indicator does not light up.

- The fuse is blown.
 - Replace the fuse with a new one.
- The ground (earth) wire is not securely connected.
 - Fasten the ground (earth) wire securely to a metal point of the car.
- The voltage going into the remote input (REM) terminal is too low.
 - Turn on the car audio unit if it is not turned on.
 - Use a relay if the system employs too many amplifiers.
- Check the battery voltage (10.5 – 16 V).

The illumination indicator changes from white to red.

- Turn off the power switch. The speaker outputs have shorted.
 - Rectify the cause of the short.
- Turn off the power switch. Make sure the speaker cord and ground (earth) wire are securely connected.

The unit becomes abnormally hot.

- The unit heats up abnormally.
 - Use speakers with suitable impedance: 2 – 8 Ω (stereo), 4 – 8 Ω (when used as a bridging amplifier).
- Make sure to place the unit in a well ventilated location.

The sound is interrupted.

- The thermal protector has activated.
 - Reduce the volume.

Alternator noise is heard.

- The power connecting wires are installed too close to the RCA pin cords.
 - Keep the wires away from the cords.
- The ground (earth) wire is not securely connected.
 - Fasten the ground (earth) wire securely to a metal point of the car.
- Negative speaker wires are touching the car chassis.
 - Keep the wires away from the car chassis.

The sound is muffled.

- The filter switch is set to "HP" or "OFF".
 - When connecting the subwoofer, set to "LP".
- The filter switch is set to "LP".
 - When connecting the full range speaker, set to "OFF" or "HP".

The sound is too quiet.

- The LEVEL adjustment control is not appropriate.
 - Turn the LEVEL adjustment control in the clockwise direction.

If these solutions do not help improve the situation, consult your nearest Sony dealer.

This warranty is valid only in the United States.

SONY®

LIMITED WARRANTY Car Audio (U.S. Only)

Sony Electronics Inc. ("Sony") warrants this product against defects in material or workmanship for the time periods and as set forth below when purchased directly from Sony or a Sony Retailer. Pursuant to this Limited Warranty, Sony will, at its option, (i) repair the product using new or refurbished parts or (ii) replace the product with a new or refurbished product. For purposes of this Limited Warranty, "refurbished" means a product or part that has been returned to its original specifications. **In the event of a defect, these are your exclusive remedies.**

Labor: For a period of three (3) years from the original date of purchase of the product ("Labor Warranty"), Sony will, at its option, repair or replace with new or refurbished product, product determined to be defective. If Sony elects to replace the product after this Labor Warranty has expired but while the Parts Warranty below is still in effect, it will do so for the applicable labor charge.

Parts: For a period of three (3) years from the original date of purchase of product ("Parts Warranty"), Sony will supply new or refurbished replacement parts in exchange for parts determined to be defective.

This Limited Warranty covers only the hardware components packaged with the Product. It does not cover technical assistance for hardware or software usage and it does not cover any software products whether or not contained in the Product; any such software is provided "AS IS" unless expressly provided for in any enclosed software Limited Warranty. Please refer to the End User License Agreements included with the Product for your rights and obligations with respect to the software.

Instructions: To obtain warranty service, you must deliver the product, freight prepaid, in either its original packaging or packaging affording an equal degree of protection to the Sony authorized service facility specified. **It is your responsibility to backup any data, software or other materials you may have stored or preserved on your unit. It is likely that such data, software, or other materials will be lost or reformatted during service and Sony will not be responsible for any such damage or loss.** A dated purchase receipt from Sony or a Sony Retailer is required. For specific instructions on how to obtain warranty service for your product,

Visit Sony's Web Site:
www.sony.com/support

Or call the **Sony Customer Information Service Center**
1-800-222-SONY(7669)

For an accessory or part not available from your authorized dealer, call:

1-800-488-SONY (7669)

Repair / Replacement Warranty: This Limited Warranty shall apply to any repair, replacement part or replacement product for the remainder of the original Limited Warranty period or for ninety (90) days, whichever is longer. Any parts or product replaced under this Limited Warranty will become the property of Sony.

This Limited Warranty only covers product issues caused by defects in material or workmanship during ordinary consumer use; it does not cover product issues caused by any other reason, including but not limited to product issues due to commercial use, acts of God, misuse, limitations of technology, or modification of or to any part of the Sony product or product purchased from other than Sony or a Sony Retailer. To determine if a retailer is part of the Sony Retailer Network, please contact Sony's Customer Service Call Center or go to www.sony.com/support. This Limited Warranty does not cover Sony products sold AS IS or WITH ALL FAULTS or consumables (such as fuses or batteries). This Limited Warranty is invalid if the factory-applied serial number has been altered or removed from the product. This Limited Warranty is valid only in the United States.

LIMITATION ON DAMAGES: SONY SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT.

DURATION OF IMPLIED WARRANTIES: EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may have other rights which vary from state to state.

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