

# SONY®

4-581-373-21(2)

## 4 Channel Class-D Amplifier

Operating Instructions

GB



\* 4 5 8 1 3 7 3 2 1 \* (2)

XM-S400D

Made in Thailand



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 100 W per channel (at 4  $\Omega$ ).
- Built-in LP (low-pass) filter and HP (high-pass) filter.
- 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 a REMOTE connection.
- Class-D Technology\* is supported.

### \* Class-D Technology

The Class-D Technology is a method to convert and amplify music signals with MOSFETs to high speed pulse signals. Furthermore, it features high efficiency and low heat generation.

---

## Table of Contents

Features .....	3
----------------	---

---

### Operation

Location and Function of Controls .....	4
---	---

---

### Installation and Connections

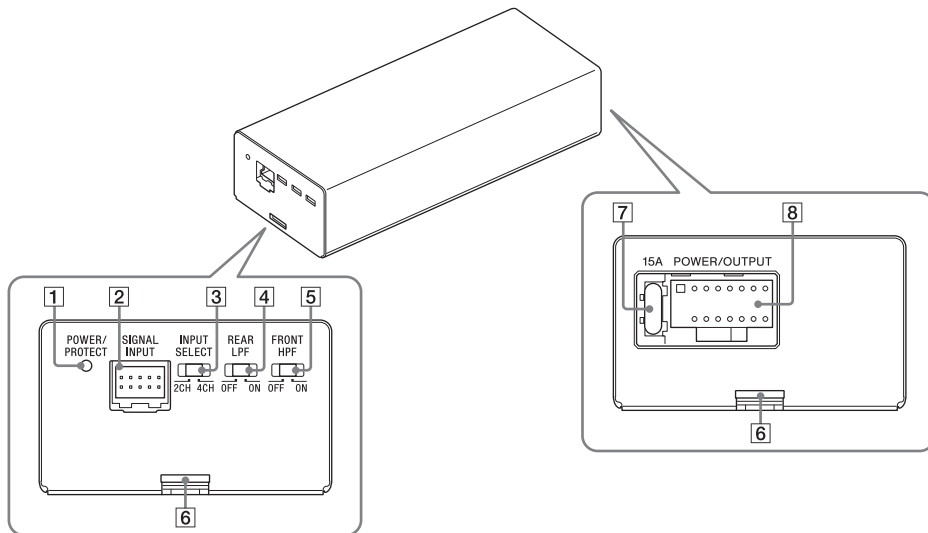
Parts for Installation and Connections .....	5
Installation .....	5
Connections .....	6
Power Connections .....	6
Input Connections .....	7
Speaker Connections .....	9

---

### Additional Information

Precautions .....	10
Maintenance .....	10
Fuse Replacement .....	10
Specifications .....	11
Troubleshooting .....	12

## Location and Function of Controls



**1 POWER/PROTECT indicator**

Lights up in green during operation. If the protection circuit activates, the POWER/PROTECT indicator flashes. For details, see "Troubleshooting" (page 12).

**2 SIGNAL INPUT connector**

Can be connected with the supplied RCA input cord or high level input cord.

**3 INPUT SELECT switch**

Sets the input signal to "2CH" or "4CH."

**4 REAR LPF (low-pass filter) switch**

Sets the low-pass filter (LPF) to "ON" or "OFF."

**5 FRONT HPF (high-pass filter) switch**

Sets the high-pass filter (HPF) to "ON" or "OFF."

**6 Slit for the supplied bracket**

Insert the bracket and secure with the screw to mount the unit on the mounting board or flat surface.

**7 Fuse holder (15A)**

When replacing the fuse, be sure to use one with 15 A.

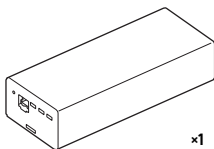
**8 POWER/OUTPUT connector**

Can be connected with the supplied power connection cable.

## Installation and Connections

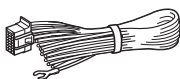
### Parts for Installation and Connections

① Main unit



x1

② Power connection cable



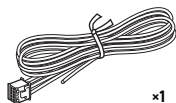
x1

③ RCA input cord



x1

④ High level input cord



x1

⑤ Bracket



x2

⑥ Bracket screw  
ø 2.6 mm × 6 mm



x2

⑦ Mounting screw  
ø 4 mm × 20 mm



x2

This parts list does not include all the package contents.

### Installation

- Mount the unit on a flat surface.
- Mount the unit where
  - The unit will not interfere with the normal movements of the driver.
  - The unit will not be exposed to direct sunlight or hot air from the heater.

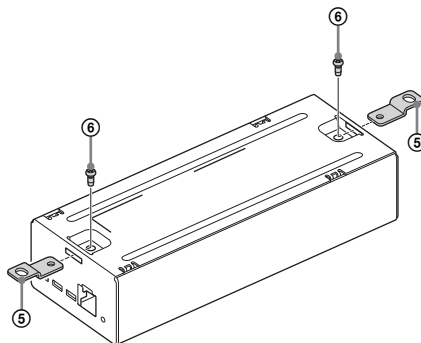
– The unit will not come into contact with a driver/passengers or materials in your car since the unit becomes hot during use.

- Do not install the unit under the floor carpet, where the heat dissipation from the unit will be considerably impaired.

#### Mounting the unit

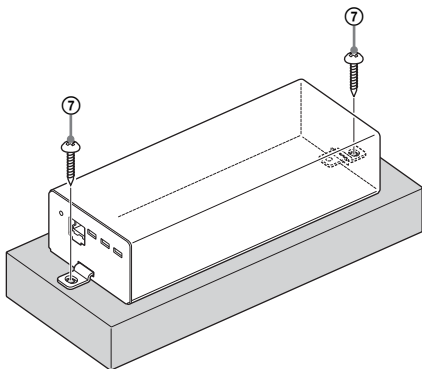
Prepare a mounting board that is thicker than 20 mm since the supplied mounting screws ⑦ are all 20 mm long. The unit can also be mounted on the flat surface of your car without a mounting board.

- 1 Insert the supplied mounting brackets ⑤ into the slits of the unit and secure them with the supplied bracket screws ⑥.



- 2 Place the unit on the mounting board and mark the two screw hole positions.
- 3 Drill a 3 mm pilot hole at each mark on the mounting board.

- 4** Place the unit on the mounting board and secure it with the supplied mounting screws ⑦.



## Power Connections

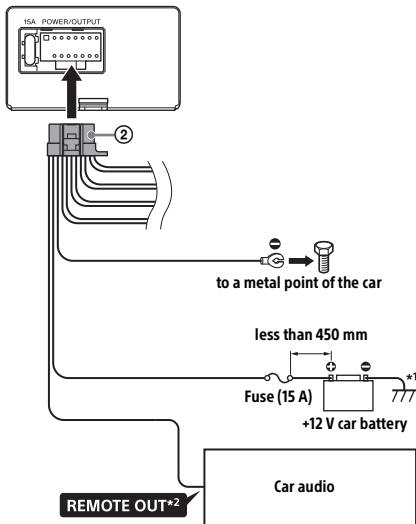
- Connect the +12 V power supply wire only after all the other wires have been connected and the settings on this unit have been made.
- Be sure to connect the ground (earth) wire of the unit securely to a metal point of the car. A loose connection may cause a malfunction of the amplifier.
- Be sure to connect the remote control wire of the car audio unit to the remote input (REM) wire of the supplied power connection cable.
- When using a car audio unit without a remote output for the amplifier, connect the remote input (REM) wire of the supplied power connection cable to the accessory power supply.
- Use a power supply wire with a fuse (15 A) attached.
- All power wires connected to the positive battery post should be fused within 450 mm 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 15 A will run through the system. Therefore, make sure that the wires to be connected to the +12 V and GND wires of this unit are at least 14-Gauge (AWG-14) or have a sectional area of more than 2 mm<sup>2</sup>.

## Connections

- Before making any connections, disconnect the ground (earth) terminal of the car battery to avoid short circuits.
- If your car is equipped with a computer system for navigation or some other purpose, disconnecting the ground (earth) wire from the car battery may damage the computer memory. Leaving the ground (earth) wire connected and disconnecting the +12 V power supply wire until all the other wires have been connected may prevent short circuits.
- Be sure to use speakers with an adequate power rating. If you use small capacity speakers, they may be damaged.
- Do not connect the ⊖ terminal of the speaker system to the car chassis, and do not connect the ⊖ 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.

## Making power connections

Connect the supplied power connection cable to the POWER/OUTPUT connector on the unit.



\*1 Ground (earth) to chassis.

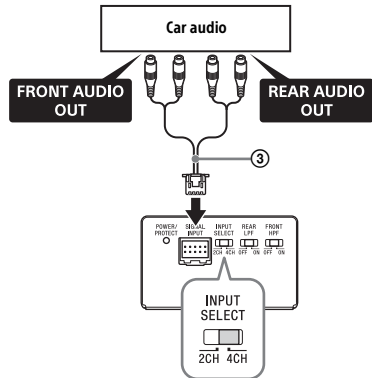
\*2 If you have the factory original or some other car audio unit without a remote output for the amplifier, connect the remote input (REM) wire of the supplied power connection cable to the accessory power supply. With the high level input connection, the car audio unit can also be activated without need for a REMOTE connection. However, this function is not guaranteed for all car audio units.

## Input Connections

Set the INPUT SELECT switch to "2CH" or "4CH" according to the input connection. Also, refer to the manual supplied with your car audio unit for further details.

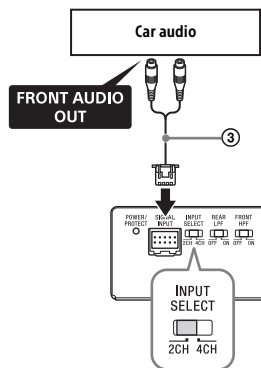
### A Line input connection

Set the INPUT SELECT switch to "4CH" with the speaker connection **1** (page 9).



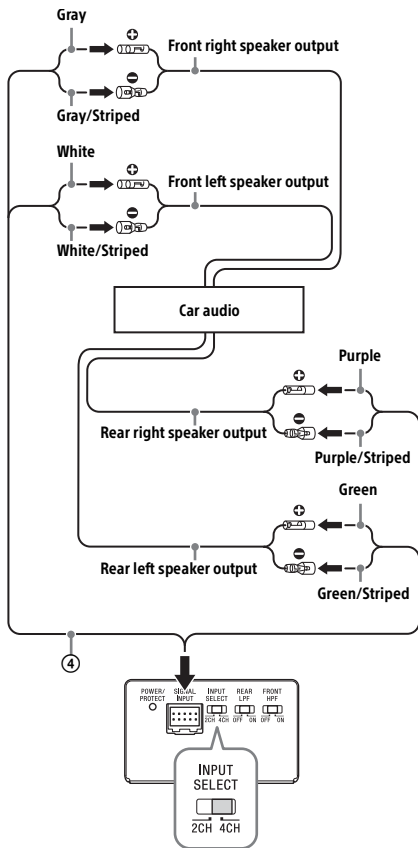
### B Line input connection

Set the INPUT SELECT switch to "2CH" with the speaker connection **2** (page 9).



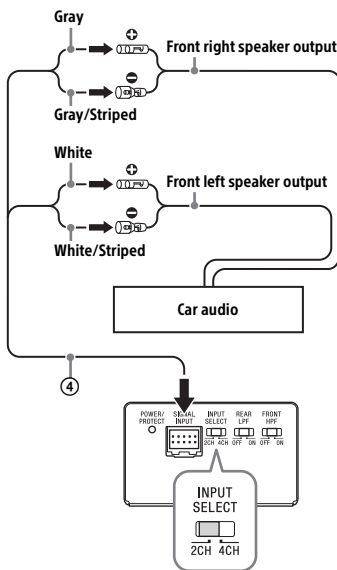
### C High level input connection

Set the INPUT SELECT switch to "4CH" with the speaker connection **1** (page 9).



### D High level input connection

Set the INPUT SELECT switch to "2CH" with the speaker connection **2** (page 9).



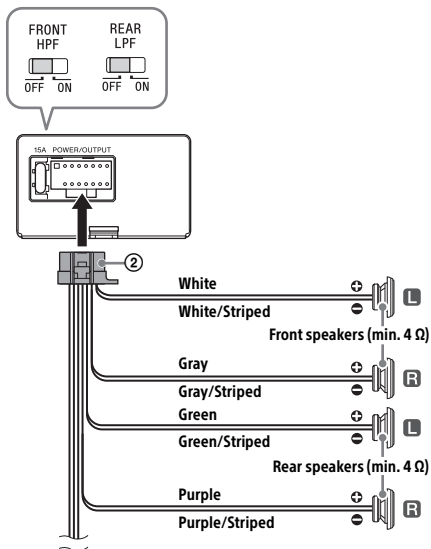


## Speaker Connections

Set the REAR LPF switch and FRONT HPF switch to "ON" or "OFF" according to the speaker system. Also, refer to the manual supplied with your speakers for further details.

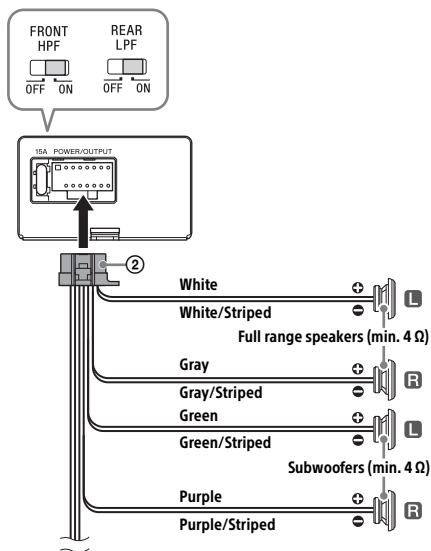
### 1 4-speaker system

Set with the input connection **A** (page 7) or **C** (page 8).



### 2 2-way system

Set with the input connection **B** (page 7) or **D** (page 8).



#### Note

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

## Additional Information

### Precautions

- This unit is designed for negative ground (earth) 12 V DC operation only.
- Use speakers with an impedance of 4  $\Omega$  to 8  $\Omega$ .
- Do not connect any active speakers (with built-in amplifiers) to 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
  - Inclined surface
  - Direct contact with a driver/passengers.
- 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 unit 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 unit 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 unit 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.

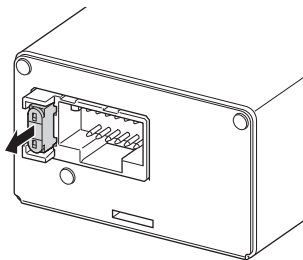
If a protection circuit is activated, the POWER/PROTECT indicator will flash. For details, see "Troubleshooting" (page 12).

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 the fuse. 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: 45 Watts RMS  $\times$  4 at  
4 Ohms  $<$  1% THD+N  
SN Ratio: 83 dB  
(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

1 V (RCA pin jacks),  
8 V (High level input)

### Outputs

Speaker terminals

### Speaker impedance

4  $\Omega$  – 8  $\Omega$

### Maximum output

4 Speakers: 100 W  $\times$  4 (at 4  $\Omega$ )

### Rated output

(supply voltage at 14.4 V, 1 kHz, 1% THD)  
4 Speakers: 45 W  $\times$  4 (at 4  $\Omega$ )

### Frequency response

20 Hz – 20 kHz ( $+0.5$ / $-3.0$  dB)

### Harmonic distortion

0.08% or less (at 1 kHz, 4  $\Omega$ )

### Low-pass filter

120 Hz, 12 dB/oct

### High-pass filter

120 Hz, 12 dB/oct

### Power requirements

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

### Power supply voltage

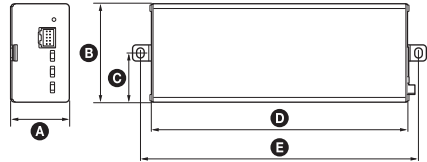
10.5 V – 16 V

### Current drain

At rated output: 15 A (4  $\Omega$ , 45 W  $\times$  4)  
Remote input: 1 mA

## Dimensions

Approx. 162.8 mm  $\times$  37.3 mm  $\times$  62.6 mm  
(w/h/d) not incl. projecting parts and controls



- A** 37.3 mm
- B** 62.6 mm
- C** 31.3 mm
- D** 162.8 mm
- E** 176.8 mm

## Mass

Approx. 0.46 kg not incl. accessories

## Package contents:

Main unit (1)  
Parts for installation and connections (1 set)

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 POWER/PROTECT 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) wire 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 V – 16 V).

---

### The POWER/PROTECT indicator flashes quickly (once every 0.2 seconds) and the unit turns off automatically.

- The speaker outputs are short circuited.
  - Take out any media from the car audio unit and turn the connected equipment off, then determine the cause of the short circuits.
- The speaker cord and ground (earth) wire are not securely connected.
  - Take out any media from the car audio unit and turn the connected equipment off, then connect the speaker cord securely and fasten the ground (earth) wire to a metal point of the car.
- The unit has overheated.
  - Wait until the unit cools down.
  - Check whether the impedance of the connected speakers is lower than 4 Ω.

---

### The POWER/PROTECT indicator flashes slowly (once every second) and sound becomes low.

- The unit has overheated and thermal protector is activated.
  - Turn the volume down.

---

### The unit becomes abnormally hot.

- Use speakers with a suitable impedance of 4 Ω - 8 Ω.
- Make sure to place the unit in a well ventilated location.

---

### 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.

---

### The filter switch is set to the wrong position.

- When connecting the subwoofer (2-way system connection), set the REAR LPF switch to "ON" (page 9).
- When connecting the full range speaker (2-way system connection), set the FRONT HPF switch to "ON" (page 9).
- When connecting the front speakers and the rear speakers (4-speaker system connection), set the FRONT HPF and REAR LPF switches to "OFF" (page 9).

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







<http://www.sony.net/>

©2015 Sony Corporation Printed in Thailand