

**SONY**<sup>®</sup>

SIGNAL PROCESSING UNIT

**PFV-SP3100**

BACKUP POWER SUPPLY UNIT

**HK-PSU01**

INSTALLATION MANUAL

1st Edition

Serial No. 10001 and Higher (PFV-SP3100)

Serial No. 10001 and Higher (HK-PSU01)

## ⚠ 警告

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## ⚠ WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

## ⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegebenen Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

## ⚠ AVERTISSEMENT

Ce manuel est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

### For the U.S.A (PFV-SP3100)

#### Attention-when the product is installed in Rack:

##### 1. Prevention against overloading of branch circuit

When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

##### 2. Providing protective earth

When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

##### 3. Internal air ambient temperature of the rack

When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

##### 4. Prevention against achieving hazardous condition due to uneven mechanical loading

When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

##### 5. Install the equipment while taking the operating temperature of the equipment into consideration

For the operating temperature of the equipment, refer to the specifications of the Operation Manual.

##### 6. When performing the installation, keep the rear of the unit 10 cm (4 inches) or more away from walls in order to obtain proper exhaust and radiation of heat.

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# Manual Structure

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## Purpose of this manual

This manual is the installation manual of Signal Processing Unit PFV-SP3100 and its Backup Power Supply Unit HK-PSU01.

This manual is intended for use by trained system and service engineers, and describes the information for installation of the unit.

### Note

The functions and specifications of HK-PSU01 and PFV-SP3100's power supply unit are equal. This manual uses "Power Supply Unit" for HK-PSU01 and PFV-SP3100's power supply unit.

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## Related manuals

The following manuals are prepared for PFV-SP3100.

- **Operation Manual (Supplied with PFV-SP3100)**

This manual describes the notes on operating, the locations and functions of parts, and controls of PFV-SP3100.

- **Maintenance Manual (Available on request)**

This manual describes the information for periodic maintenance and detailed service.

If this manual is required, please contact your local Sony Sales Office/Service Center.

- **"Semiconductor Pin Assignments" CD-ROM (Available on request)**

This "Semiconductor Pin Assignments" CD-ROM allows you to search for semiconductors used in B&P Company equipment.

Semiconductors that cannot be searched for on this CD-ROM are listed in the service manual for the corresponding unit. The service manual contains a complete list of all semiconductors and their ID Nos., and thus should be used together with the CD-ROM.

Part number: 9-968-546-XX

# Section 1

## Installation

### 1-1. Operating Environment

Operating temperature	+5 °C to +40 °C
Performance temperature	+10 °C to +35 °C
Humidity	10 to 90 % (No condensation)
Mass: PFV-SP3100	Approx. 8.5 kg (Without the optional unit and board)
HK-PSU01	Approx. 1 kg

To prevent overheating of PFV-SP3100, ensure that there is good air circulation around the unit.

#### **WARNING**

Do not put the unit in a place subject to excessive lamp smoke, vapor, moisture, or dust, otherwise a fire or electric shock may result.

#### **CAUTION**

Install in a stable location.

Installation on unstable or tilting surface may cause the unit fall off, resulting in injury.

### 1-2. Power Supply

#### 1-2-1. Power Supply Specifications

Power voltage	AC 100 V to 240 V
Power frequency	50 Hz or 60 Hz
Current consumption	1.0 to 0.5 A
Rush current	AC 100 V IN : 10 A AC 240 V IN : 33 A

#### **Note**

AC power supply is required a capacity which is commensurate with rush current.

If the capacity of the AC power supply is not enough, the breaker of AC power on the supply side may operate or this unit may not operate normally.

#### 1-2-2. Recommended Power Cord

##### **For customers in the U.S.A. and Canada**

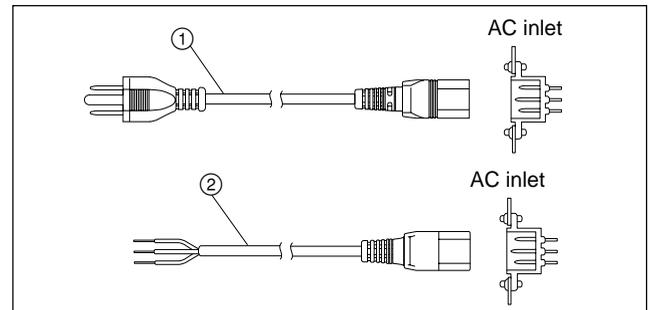
##### **Required Part**

- ① Power cord, 125 V 10 A (2.4 m) : △ 1-557-377-11

##### **For customers in the United Kingdom**

##### **Required Part**

- ② Power cord, 250 V 10 A (2.5 m) : △ 1-782-929-11



#### **Note**

For the customers outside of the area as shown above, please contact your local Sony Sales Office/Service Center.

#### **WARNING**

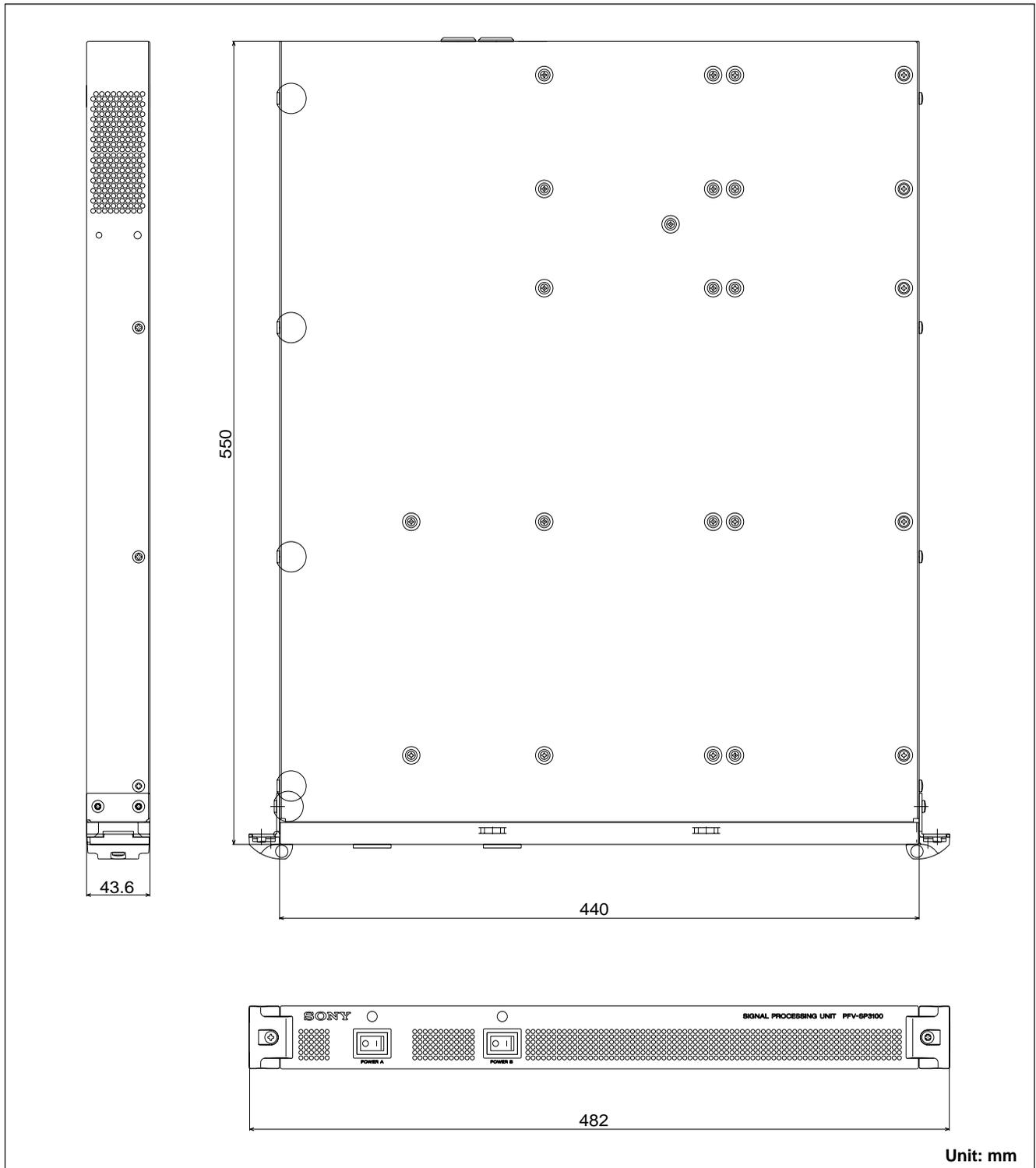
- Use a specified power cord only.  
Be sure to use a recommended power cord to avoid fire and/or an electric shock.
- Ground the unit for your safety.  
Be sure to attach a ground wire to avoid an electric shock.

### 1-3. Installation Space

#### Notes

- Do not block the ventilation holes of the unit.
- Both of the front and rear sides must be at least 20 cm away from the walls for ventilation and maintenance.

The outer dimensions of PFV-SP3100 are as shown here:



Unit: mm

## 1-4. Installing/Removing Optional Power Supply Unit

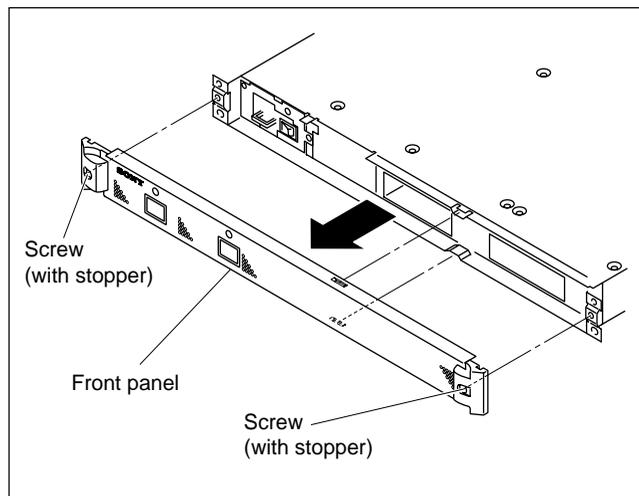
### WARNING

Before installing the backup power supply unit HK-PSU01 in PFV-SP3100, set the power switch of HK-PSU01 to the “O” position (OFF).

Otherwise, deterioration of a connector which connects HK-PSU01 to PFV-SP3100 may cause a fire.

### Installation Procedure

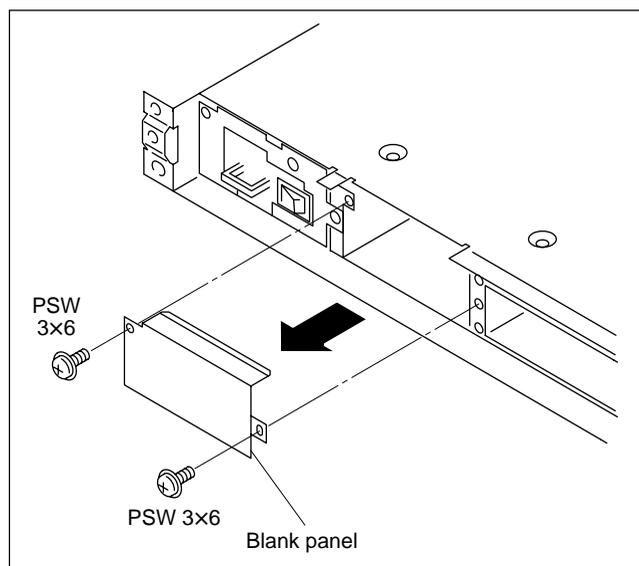
1. Loosen the two screws and remove the front panel.



2. Remove the two screws and remove the blank panel in the empty slot for the backup power supply unit.

### Note

Keep the blank panel which is removed.



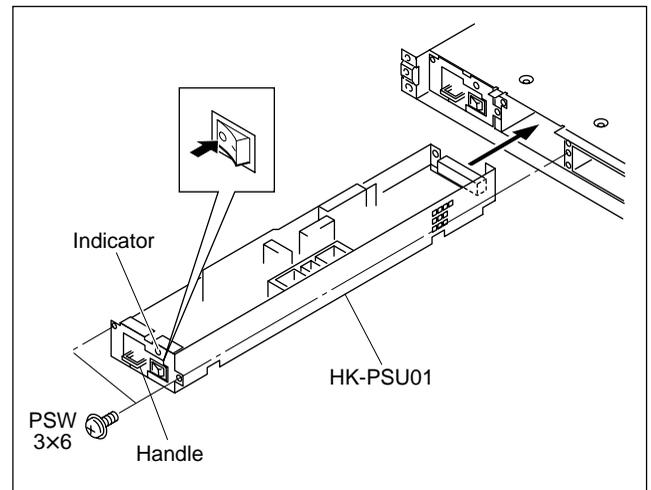
3. Make sure that the power switch of the backup power supply unit HK-PSU01 is set to the “O” position (OFF).
4. Insert HK-PSU01 into PFV-SP3100 and push it by hand as far as it will go.
5. Secure HK-PSU01 with the two screws which is removed in step 2.

### CAUTION

If installation of the power supply unit is incomplete, contact resistance of the connector increases and that may cause damage and smoke.

Tighten firmly the screws that secure the power supply units.

Do not turn on the power until the power supply units are firmly secured.



6. Reinstall the front panel.
7. Connect the power cord and set the power switch to the “I” position (ON).
8. Make sure that the indicator lights.

### Note

If the indicator does not light, turn off the power and contact your local Sony Sales Office/Service Center.

### Removal Procedure

1. Turn off the power of the power supply unit which you want to remove. (Set the power switch to “O” position.)
2. Unplug the power plug from the wall outlet.
3. Remove the front panel.
4. Remove the screws securing the power supply unit.
5. Pull out the power supply unit from the slot using its front handle.
6. Install the blank panel.
7. Reinstall the front panel.

## 1-5. Installing Optional Board

The optional board can be installed in any empty slot of PFV-SP3100.

When installing the processing module controller, the No.4 slot is used as the master slot and the No.3 slot is used as the sub-slot.

### Installing Main Board (Front side)

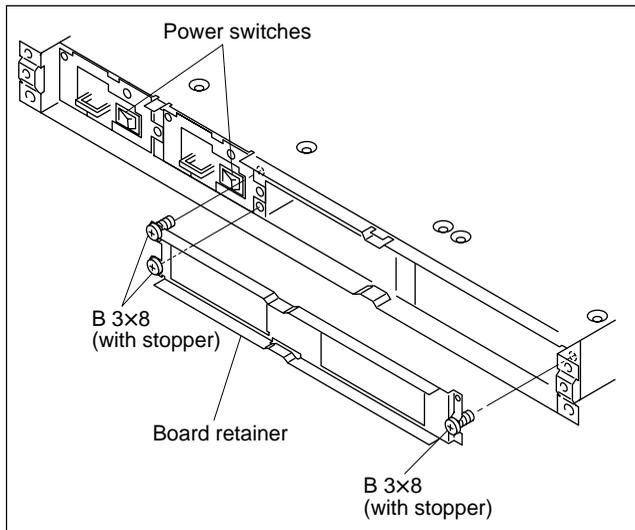
Two slots are used depending on the optional board. In this section, the illustrations for the single-slot type's board are described.

1. Turn off the power switches of PFV-SP3100.

**Note**

Turn off both of the power switches when the backup power supply unit is installed.

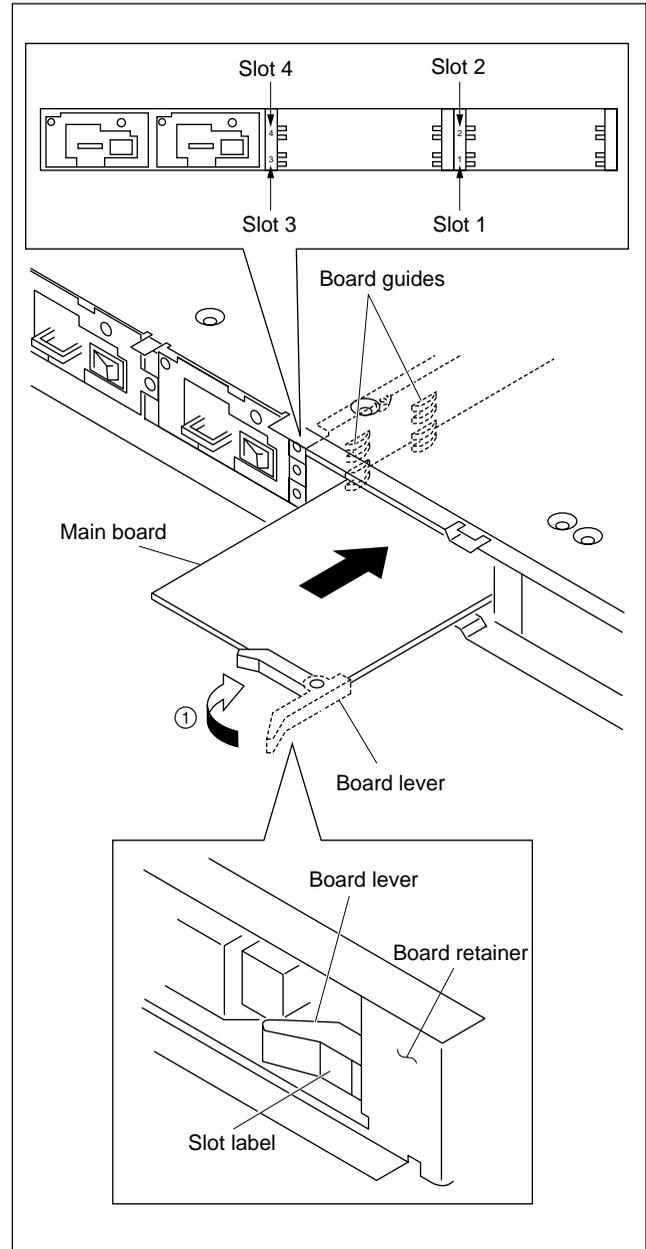
2. Remove the front panel. (Refer to Section 1-4.)
3. Loosen the four screws and remove the board retainer.



4. Insert the main board fully into the slot along the board guides and close the board lever in the direction indicated by arrow ①.
5. Stick the slot label supplied with the PFV-SP3100 onto the board lever.

**Note**

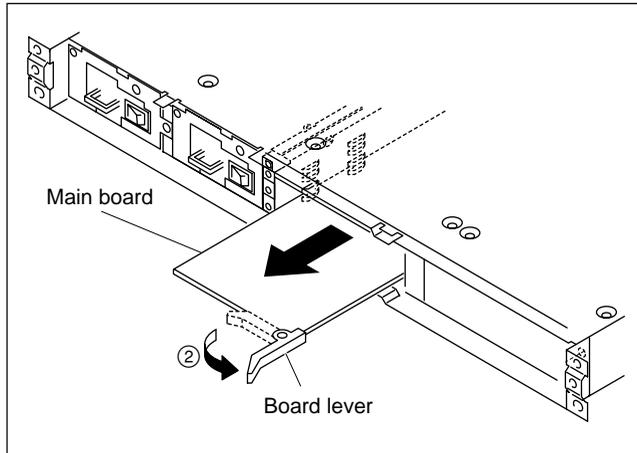
Attach the supplied slot label to the position where it is not concealed by the board retainer as shown in the figure.



6. Reinstall the board retainer.
7. Reinstall the front panel.

**Note**

When removing the main board, turn the board lever in the direction of the arrow ②, and pull out the board toward you.

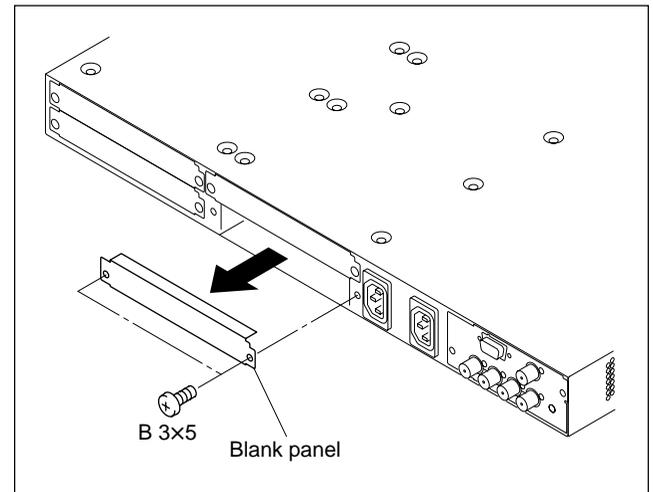
**Installing Connector Panel (Rear side)**

The connector panel must be installed to the slot which contains the main board.

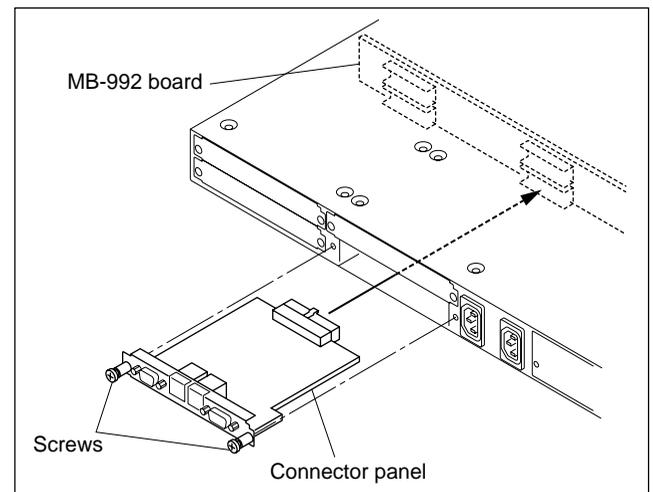
1. Remove the two screws and remove the blank panel of the slot which contains the main board.

**Note**

Keep the removed blank panel and two screws.



2. Connect the connector panel to the MB-992 board.
3. Secure the connector panel with the two screws.

**Note**

Do not open the slot for an air-cooled effect of this unit. Attach the blank panel to an empty slot.

## 1-6. Rack Mounting

PFV-SP3100 can be mounted on a 19-inch standard rack for use.

Mount PFV-SP3100 on the rack properly in the procedure below using a specified rack mounting kit.

### Specified rack mounting kit: RMM-10

#### Note

PFV-SP3100 may not be able to be mounted on a 19-inch standard rack using a rack mounting kit other than the specified one.

### Components of RMM-10

- Rack brackets ..... 2 pcs
- Rack mounting adaptor (right) ..... 1 pc  
[Including two screws (B 4×6: 7-682-560-09)]
- Rack mounting adaptor (left) ..... 1 pc  
[Including two screws (B 4×6: 7-682-560-09)]
- Rack bracket fixing screws (B 4×6: 7-682-560-09)  
..... 6 pcs
- Adaptor fixing screws (B 4×10: 7-682-560-10) ..... 6 pcs

### Required other parts

To mount the unit on the rack, the following parts are required.

- Screws for rack mounting (B5×12: 7-682-576-04)  
..... 4 pcs

### 1-6-1. Notes on Rack Mounting

#### WARNING

- Fix the rack on the horizontal and firm floor with bolts to prevent it from turning over or moving.  
If the rack overturn due to the weight of the unit, this may cause a death or serious injury.
- After rack mounting, be sure to tighten the screws of the rack angle and fix this unit to the rack.  
If not, this unit may slide and fall from the rack. This causes an injury.

#### CAUTION

Attention when this unit is installed in the rack:

- Use the specified rack mounting kit.
- Be careful not to put your hand or finger in the rack mount rail.
- Install in a stable posture.

#### Note

Install a ventilating fan in the rack to prevent the increase in the temperature inside a rack when multiple units are put in one rack.

### 1-6-2. Rack Mounting Procedure

Explains the procedure for rack mounting by Rack Mount Kit RMM-10.

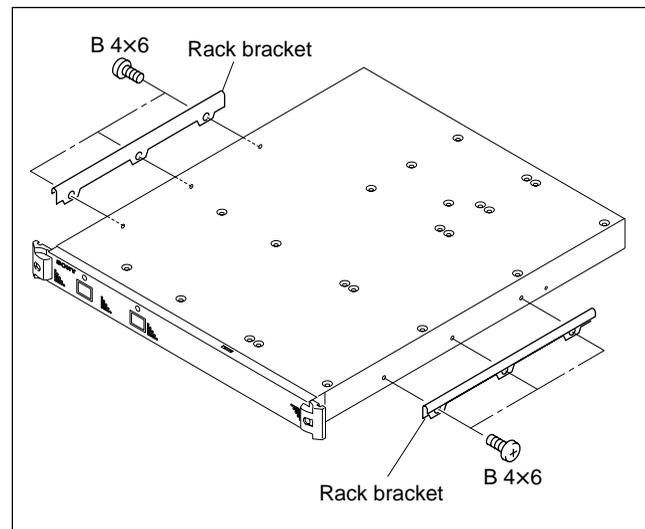
#### Note

Fasten the screws at the tightening torque below.  
Tightening torque: 1.2 N•m { 12.2 kgf•cm }

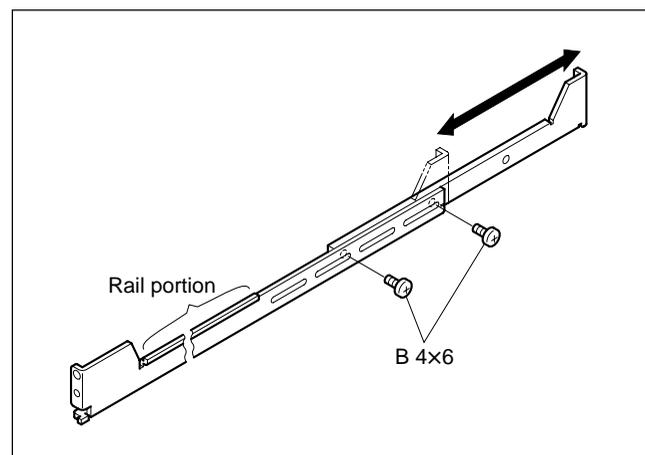
1. Attach the rack brackets in the side panels of the unit with the specified six screws.

#### Note

Be sure to use B4×6 as a screw.



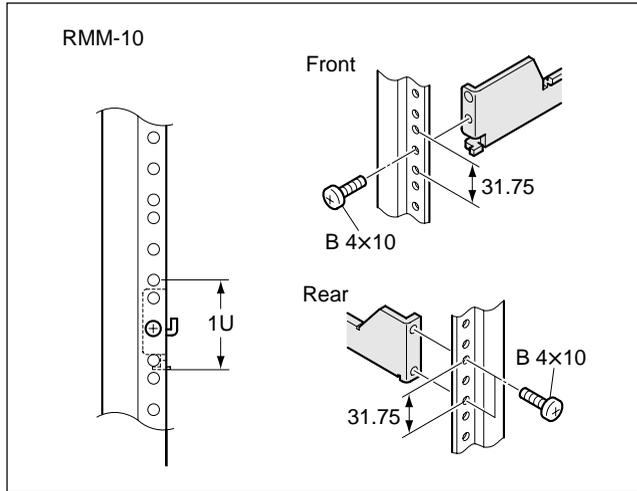
2. Loosen the screws at the rear of the each adaptor, before adjusting each adaptor length to the rack depth. (Following figure is case of left side.)



**Note**

The maximum depth of an adaptor is 750 mm.  
 The minimum depth of an adaptor is 595 mm.

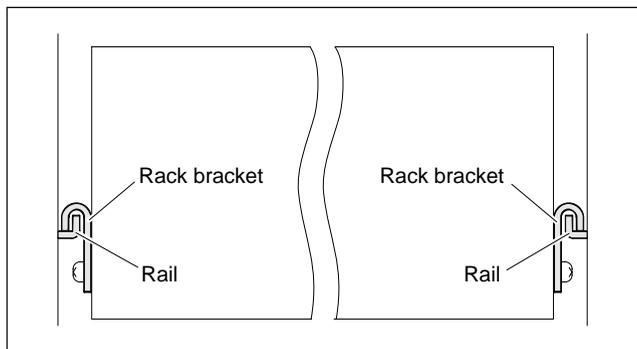
3. Firmly lay the right and left adaptors in the rack with the specified six screws.  
 (Following figure is case of left side.)



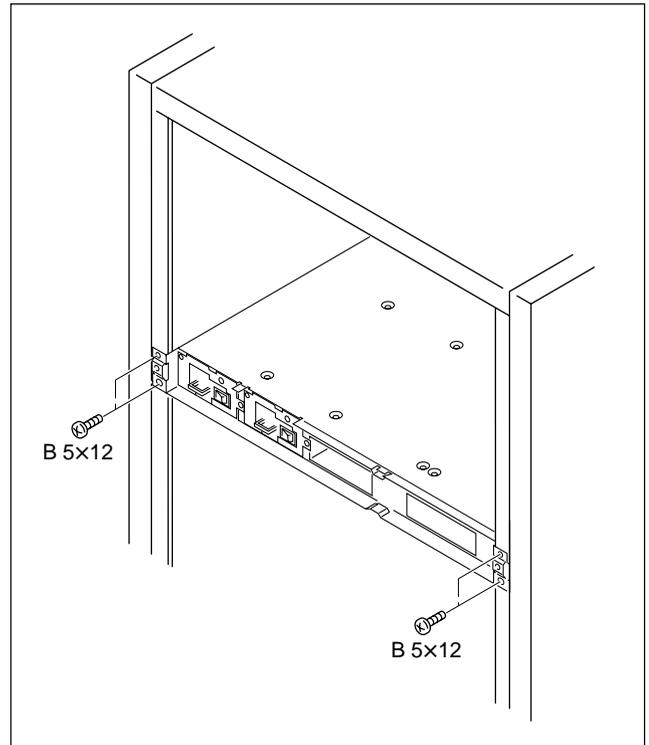
4. Fasten the length adjustment screws which are loosened in step 2.
5. Remove the front panel. (Refer to Section 1-4.)
6. Align the crook of the each rack bracket on the side panels of the unit with the rail, then slide the unit backward.

**Note**

Each rack bracket covers the rails as shown in the figure below.



7. Fix the unit to the rack with the specified screws.



8. Reinstall the front panel.

## 1-7. Matching Connector/Cable

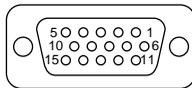
When external cables are connected to the connectors on the PFV-SP3100 rear panel, the hardware listed below (or the equivalent) must be used.

PFV-SP3100 connector		Matching connector/cable	
Print on	Connector type	Connector type	Sony Part Number
REMOTE REF IN A/B	BNC, 75Ω	BNC, 75Ω Belden 1694 coaxial cable	1-569-370-12 –
STATUS OUT	D-sub Mini 15-pin, Female	D-sub Mini 15-pin, Male	–

## 1-8. Signal Inputs/Outputs

The input and output signals of the connector on the rear panel are as shown here:

STATUS OUT (D-sub Mini 15-pin, female)



< External view >

Pin No.	I/O	Signal	Function (All pins are low in level under normal conditions)	Description
1	O	PS-A ERROR OUT	State of power unit A	The output of power unit A is abnormal. The fan of power unit A stops.
2	O	PS-B ERROR OUT	State of power unit B	The output of power unit B is abnormal. The fan of power unit B stops.
3	O	FAN ERROR OUT	State of frame ventilation fan	The frame ventilation fan stops.
4	O	BOARD ERROR OUT	Error status output of optional board	Error output from optional board Overpower consumption from optional board
5	O	BOARD WARNING OUT	Warning status output of optional board	Warning output from optional board
6	O	BOARD ERROR 1 OUT	Error status output of board installed in the No.1 slot	Error output from the optional board installed in the No.1 slot.
7	O	BOARD ERROR 2 OUT	Error status output of board installed in the No.2 slot	Error output from the optional board installed in the No.2 slot.
8	O	BOARD ERROR 3 OUT	Error status output of board installed in the No.3 slot	Error output from the optional board installed in the No.3 slot.
9	O	BOARD ERROR 4 OUT	Error status output of board installed in the No.4 slot	Error output from the optional board installed in the No.4 slot.
10	O	BOARD WARNING 1 OUT	Warning status output of board installed in the No.1 slot	Warning output from the optional board installed in the No.1 slot.
11	O	BOARD WARNING 2 OUT	Warning status output of board installed in the No.2 slot	Warning output from the optional board installed in the No.2 slot.
12	O	BOARD WARNING 3 OUT	Warning status output of board installed in the No.3 slot	Warning output from the optional board installed in the No.3 slot.
13	O	BOARD WARNING 4 OUT	Warning status output of board installed in the No.4 slot	Warning output from the optional board installed in the No.4 slot.
14, 15	–	GND		

## Section 2

### Service Overview

#### 2-1. Cleaning the Filter

**WARNING**

Be sure to turn off the power switch and disconnect the power cord from the outlet before starting any work.

**CAUTION**

- The temperature inside the unit increases if dust adheres to the filter and the ventilation holes are blocked. Touching inside the unit while it is hot may result in burn injuries.
- Clean the filter on the rear of the front panel periodically because the filter tends to gather dust (once every two months).

**Procedure**

1. Remove the front panel. (Refer to Section 1-4.)
2. Remove the dust from the filter using a vacuum.

**Note**

If the filter is very dusty, it should be washed in water, and then dried completely.

#### 2-2. Periodic Replacement Parts to Be Recommended

The fan used on the rear panel of this unit is periodic replacement parts to be recommended. The life of the fan is approximately 50,000 hours. The life corresponds to about five years and a half if the power is on all the time, so the fan should be replaced according to service conditions.

**Note**

For the replacement of the fan, refer to the optionally available PFV-SP3100 Maintenance Manual.



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