

SONY®

SWITCHER PROCESSOR PACK

MVS-8000G-C

MVS8000GS-C

MULTI FORMAT SWITCHER PROCESSOR

MVS-8000G

MVS-8000GSF

MKS-8110G	MKS-8111G	MKS-8160G	MKS-8161M
MKS-8162A	MKS-8170G	MKS-8210G	MKS-8442G
MKS-8450G	HK-PSU04	BZS-8200	BZS-8250
BZS-8420	BZS-8500M	BZS-8510M	BZS-8520M
BZS-8530M			

OPERATION MANUAL English

1st Edition

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

THIS APPARATUS MUST BE EARTHED.

VORSICHT

Um die Gefahr von Bränden oder elektrischen Schlägen zu verringern, darf dieses Gerät nicht Regen oder Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

DIESES GERÄT MUSS GEERDET WERDEN.

AVERTISSEMENT

Afin de réduire les risques d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

CET APPAREIL DOIT ÊTRE RELIÉ À LA TERRE.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio

communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

Pour les utilisateurs au Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.

If used in USA, use the UL LISTED power cord specified below.

DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord Length	Type SJT, three 16 or 18 AWG wires
Rating	Less than 2.5 m (8 ft 3 in)
	Minimum 10 A, 125 V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

WARNING: THIS WARNING IS APPLICABLE FOR OTHER COUNTRIES.

1. Use the approved Power Cord (3-core mains lead) / Appliance Connector / Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
2. Use the Power Cord (3-core mains lead) / Appliance Connector / Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord / Appliance Connector / Plug, please consult a qualified service personnel.

WARNING

1. Verwenden Sie ein geprüftes Netzkabel (3-adriges Stromkabel)/einen geprüften Geräteanschluss/einen geprüften Stecker mit Schutzkontakten entsprechend den Sicherheitsvorschriften, die im betreffenden Land gelten.
2. Verwenden Sie ein Netzkabel (3-adriges Stromkabel)/einen Geräteanschluss/einen Stecker mit den geeigneten Anschlusswerten (Volt, Ampere).

Wenn Sie Fragen zur Verwendung von Netzkabel/ Geräteanschluss/Stecker haben, wenden Sie sich bitte an qualifiziertes Kundendienstpersonal.

AVERTISSEMENT

1. Utilisez un cordon d'alimentation (câble secteur à 3 fils)/ fiche femelle/fiche mâle avec des contacts de mise à la terre conformes à la réglementation de sécurité locale applicable.
 2. Utilisez un cordon d'alimentation (câble secteur à 3 fils)/ fiche femelle/fiche mâle avec des caractéristiques nominales (tension, ampérage) appropriées.
- Pour toute question sur l'utilisation du cordon d'alimentation/ fiche femelle/fiche mâle ci-dessus, consultez un technicien du service après-vente qualifié.

For the customers in Europe (MVS-8000G/8000GSF only)

This product with the CE marking complies with both the EMC Directive and the Low Voltage Directive issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European standards:

- EN60950-1: Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment: E4 (controlled EMC environment, ex. TV studio).

Für Kunden in Europa (nur MVS-8000G/8000GSF)

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie sowie die Niederspannungsrichtlinie der EG-Kommission.

Angewandte Normen:

- EN60950-1: Sicherheitsbestimmungen
- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgenden elektromagnetischen Umgebungen: E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Pour les clients européens (MVS-8000G/8000GSF uniquement)

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) et à la Directive sur les basses tensions émises par la Commission de la Communauté européenne.

La conformité à ces directives implique la conformité aux normes européennes suivantes:

- EN60950-1: Sécurité des produits
- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans l'environnement électromagnétique suivant: E4 (environnement EMC contrôlé ex. studio de télévision).

For the customers in Europe (Optional Board only)

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community.

Compliance with this directive implies conformity to the following European standards:

- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment: E4 (controlled EMC environment, ex. TV studio).

Für Kunden in Europa (Carte optionnelle uniquement)

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.

Angewandte Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgende elektromagnetische Umgebung: E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Pour les clients européens (Nur optionale Zusatzkarten)

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.

La conformité à cette directive implique la conformité aux normes européennes suivantes:

- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans l'environnement électromagnétique suivant: E4 (environnement EMC contrôlé ex. studio de télévision).

For the customers in Europe

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.

The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

This apparatus shall not be used in the residential area.

Für Kunden in Europa

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.

Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland. Bei jeglichen Angelegenheiten in Bezug auf Kundendienst oder Garantie wenden Sie sich bitte

an die in den separaten Kundendienst- oder Garantiedokumenten aufgeführten Anschriften.

Dieser Apparat darf nicht im Wohnbereich verwendet werden.

Pour les clients en Europe

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japon.

Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne. Pour toute question concernant le service ou la garantie, veuillez consulter les adresses indiquées dans les documents de service ou de garantie séparés.

Ne pas utiliser cet appareil dans une zone résidentielle.

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Overview

The MVS-8000G-C or MVS8000GS-C Switcher Processor Pack is a high-performance, multi-function processor for use in an MVS-8000G Multi Format Switcher system. It has a wide range of application, being usable in live production systems in studios and ENG/OB vans as well as in postproduction editing systems.

Features

Multi format support

The MVS-8000G system is available in two configurations: a multi-format SD/HD configuration and an SD-only configuration. The SD-only configuration can be upgraded to the multi-format configuration.

- SD/HD multi format configuration
1080i/60, 1080i/59.94, 1080i/50, 1080PsF/30, 1080PsF/29.97, 1080PsF/25, 1080PsF/24, 1080PsF/23.976, 720P/59.94, 720P/50, 480i/59.94, 576i/50
- SD-only configuration
480i/59.94, 576i/50

Key resizer functions

- Magnify, shrink, move, change aspect ratio
- As a standard feature, one resizer channel is provided for each keyer
- Four resizer channels are provided per M/E bank (allowing up to 16 channels in the MVS-8000G).
- Snapshots and keyframes
- Crop

Format converter functions

- Input side format converter
Up-converter, down-converter, cross-converter
Eight channels (MKS-8450G: one board), maximum 16 channels (MKS-8450G: two boards)
- Output side format converter
Up-converter, down-converter, cross-converter
Maximum four channels on MVS-8000G (requires at least one MKS-8450G board, when MKS-8160G installed).
Maximum two channels on MVS-8000GSF. (requires at least one MKS-8450G board).

Highly expandable system configuration

By combining option boards, you can configure the optimum system for your requirements, selecting the number of inputs and outputs, and the number of M/E banks. The system's flexibility guarantees its ability to meet future expansion requirements.

High-performance keyers

Each M/E bank is equipped with four high-performance keyers that provide the following standard functions.

- Ability to apply transitions to keyers independently of the background
- Chroma key and color vector keys in each keyer
- FineKey™, and key borders up to 8H
- Color mixable matte generator available for both key fill and key borders

Simultaneous output of two programs

Each M/E bank is able to handle two simultaneous program outputs, with the ability to apply any of the four keys to program output. This gives the system the ability to handle a wide range of operating situations, for example simultaneous transmission of two programs.

Powerful preview functions

The system supports simultaneous output of look-ahead previews (next preview) and key previews, and also transition previews.

Extended frame memory functions

- Two-input, eight-output frame memory
- Maintains all MVS-8000A frame memory functions: freeze function, mask function, reposition function, and image composition function
- Approximately 5.4 GByte large capacity memory
- Two frame memory option boards can be installed (MVS-8000G only)
- Includes animation function
- Interface connection for external hard disk drive provided

Links to DME functions

By connecting the unit to an MVE-8000A or MVE-9000 DME Processor Pack with a special cable, you can apply DME wipes and processed keys and a wide variety of other DME functions as if they were native switcher functions. All DME functions can be controlled from the center control panel of the MVS-8000G system.

Backup power supply can be installed

By installing the optional HK-PSU04 Power Supply Unit, together with the power supply unit preinstalled at the factory, this provides a backup system. This reduces the risk of power supply problems, and increases the reliability of live operations.

High-performance color correction

Installation of the optional MKS-8442G Frame Memory Board and BZS-8420 Color Corrector Software provides

high-performance, two-channel color correction functionality.

Simple P/P (Program/Preset) functions

Simple mix/effect functions can be added by installing the BZS-8250 Simple P/P Software option.

The BZS-8250 option supports the following functions.

- Two keyers
- Background transitions and key transitions

Multi Program 2 Mode

By installing the BZS-8200 Multi Program 2 Software option, you can create two different backgrounds, with transition effects, in each M/E bank. M/E keyers can be assigned to these backgrounds for separate keying.

This allows you to create multiple programs within a single M/E bank by varying the keyer assignments and background video configuration.

Overview of the MVS-8000G Series Components

MVS-8000G Multi Format Switcher Processor

This is the main unit cabinet of the MVS-8000G Multi Format Switcher Processor unit (EIA 8RU size).

By default the main unit alone supports SD only, but it can be upgraded to multi-format HD/SD by installing a software upgrade.

- Two M/E banks installed as standard; can be extended to four M/E banks.
- 17 inputs installed as standard; can be extended to 80 inputs.
- 24 outputs installed as standard; can be extended to 48 outputs.
- Eight reclocked outputs can be added.
- DME I/F option board can be installed.
- Color corrector option software.
- Up to two frame memory option boards can be installed.
- Up to two format converter boards (option) can be installed. Can be extended to 16 inputs and four outputs.
- Two power supply units fitted as standard.

The following options can be installed, depending on the system.

Board Name	Maximum installable number of boards
MKS-8110G 17-Input Board	3
MKS-8111G Additional 12-Input Board	1
MKS-8160G 24-Output Board Set	1
MKS-8161M Monitor Output Board	1

Board Name	Maximum installable number of boards
MKS-8170G DME Interface Board	1
MKS-8210G Mix/Effect Board	2
MKS-8442G Frame Memory Board	2
MKS-8450G Format Converter Board	2
HK-PSU04 Power Supply Unit	2

MVS-8000GSF Multi Format Switcher Processor

This is the main unit cabinet of the MVS-8000GSF multi format switcher processor unit (EIA 4RU size).

By default the main unit alone supports SD only, but it can be upgraded to multi-format HD/SD by installing a software upgrade.

- An M/E bank installed as standard; can be extended to two M/E banks.
- 17 inputs installed as standard; can be extended to 34 inputs.
- 12 outputs installed as standard; can be extended to 24 outputs.
- Color corrector option software.
- A frame memory option board can be installed.
- Up to two format converter boards (option) can be installed. Can be extended to 16 inputs and two outputs.
- A power supply unit fitted as standard.

The following options can be installed, depending on the system.

Board Name	Maximum installable number of boards
MKS-8110G 17-Input Board	1
MKS-8162A 12-Output Connector Board	1
MKS-8210G Mix/Effect Board	1
MKS-8442G Frame Memory Board	1
MKS-8450G Format Converter Board	2
HK-PSU04 Power Supply Unit	1

MKS-8110G 17-Input Board

This is a 17-input board. The MVS-8000G has 17 inputs fitted as standard, and by installing 17 inputs at a time with this board, a maximum of 68 inputs (with three boards added) can be reached. The MVS-8000GSF has 17 inputs as standard, and can be extended to 34 inputs (with one board added).

MKS-8111G Additional 12-Input Board

This is a 12-input extension board. By installing it in the MVS-8000G, a maximum of 80 inputs can be reached. (This option cannot be installed in the MVS-8000GSF.)

MKS-8160G 24-Output Board Set

This is a 24-output board set. One set can be installed in the MVS-8000G only. This option increases the outputs to 48.

MKS-8161M Monitor Output Board

This is an HD/SD eight-output board for monitoring input signals. (This output board only carries out reclocking of the input signal, and no other processing.) One board can be installed in the MVS-8000G only.

MKS-8162A 12-Output Connector Board

This is a 12-output connector board. One board can be installed in the MVS-8000GSF only. This option increases the outputs to 24.

MKS-8170G DME Interface Board

This is an interface board for input/output of video signals with the MVE-8000A and MVE-9000 Multi Format DME Processors.

This board allows up to two MVE-8000A or MVE-9000 units to be connected. One board can be installed in the MVS-8000G only.

MKS-8210G Mix/Effect Board

This is an M/E board. The MVS-8000G has two M/E banks installed as standard, which can be extended to four M/E banks by installing this option. The MVS-8000GSF has one M/E installed as standard, and can be extended to two M/E banks by installing this option.

MKS-8442G Frame Memory Board

This is a frame memory board. A maximum of two can be installed in the MVS-8000G. One board only can be installed in the MVS-8000GSF.

MKS-8450G Format Converter Board

This is a format converter board. Up to two boards may be installed. Each board provides format conversion for eight inputs. Input formats can be set separately for each board.

HK-PSU04 Power Supply Unit

This is a backup power supply unit. The MVS-8000G is equipped with two power supply units preinstalled at the factory, but installing two HK-PSU04 units provides a fully redundant power supply. The MVS-8000GSF is

equipped with one power supply unit preinstalled at the factory, but installing another HK-PSU04 unit provides a fully redundant power supply.

BZS-8200 Multi Program 2 Software

This is software which enables the creation of two different backgrounds utilizing transition effects in each of the M/E banks of the MVS-8000G and MVS-8000GSF.

BZS-8250 Simple P/P Software

This is software which enables simple mix/effct functions on the MVS-8000G or MVS-8000GSF. It cannot be installed in a MVS-8000G with four M/E banks.

BZS-8420 Color Corrector Software

This is software which enables high-performance color correction of two channels. It supports both HD and SD. The optional MKS-8442G Frame Memory Board must be installed to use this software.

BZS-8500M Switcher Upgrade Software

This is software to upgrade a standard MVS-8000G (for SD; with two M/E banks) to support multi-format switching.

BZS-8510M Switcher Upgrade Software

This is software to upgrade a standard MVS-8000GSF (for SD; with one M/E bank) to support multi-format switching.

BZS-8520M M/E Upgrade Software

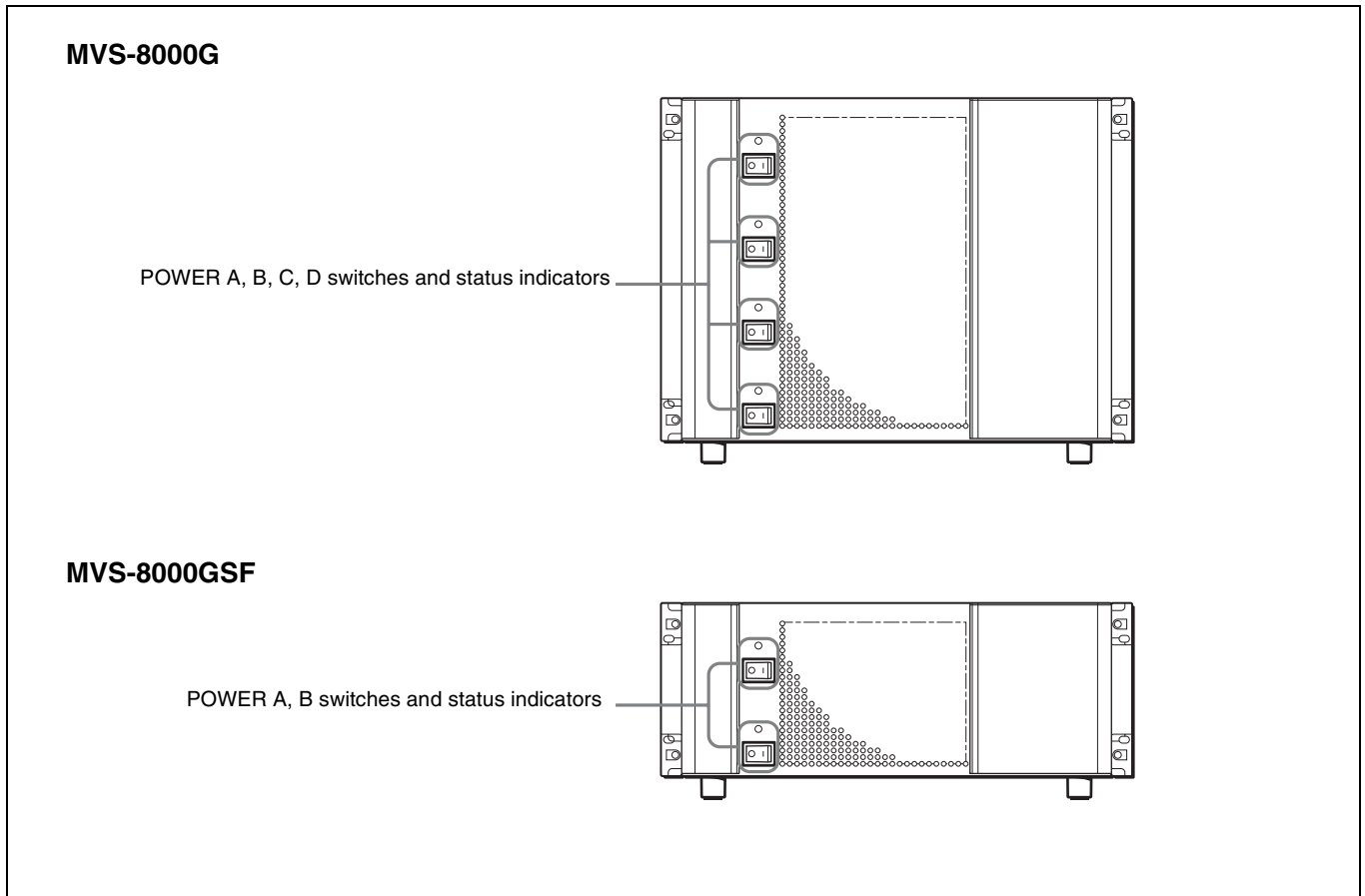
This is software to upgrade the MKS-8210G board serving as a third M/E bank of the MVS-8000G or as a second M/E bank to the MVS-8000GSF, to support multi-format switching.

BZS-8530M M/E Upgrade Software

This is software to upgrade the MKS-8210G serving as a fourth M/E bank of the MVS-8000G, to support multi-format switching.

Location and Function of Parts

Front Panel



POWER A, B, C, D switches and status indicators

The POWER switches turn the unit on and off. The unit is powered on when the POWER switches are on the “I” side, and powered off when the POWER switches are on the “O” side. The status indicators light in green when the unit is powered on.

• MVS-8000G

Depending on the configuration of your unit when shipped, the HK-PSU04 Power Supply Unit may not be installed. In this case, only the POWER A and POWER B switches are available. There is no POWER C or POWER D switch.

The unit does not operate until two of the four power switches (A, B, C and D) are on.

When the HK-PSU04 are installed, operation continues as long as two power supplies are normal.

• MVS-8000GSF

Depending on the configuration of your unit when shipped, the HK-PSU04 Power Supply Unit may not be

installed. In this case, only the POWER A switch is available. There is no POWER B switch. The unit does not operate until either of the two power switches (A and B) is on.

When the HK-PSU04 is installed, operation continues as long as one power supply is normal.

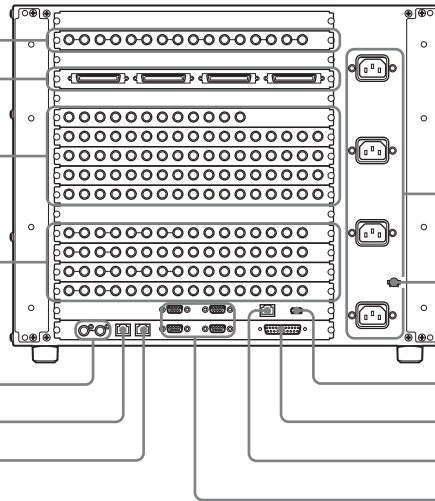
Notes

- When installing the HK-PSU04 in your unit, be sure to contact your Sony service representative.
- If a status indicator does not light when you turn a POWER switch on, there may be a fault in the power circuits. Turn the POWER switch off and contact your Sony service representative.

Rear Panel

MVS-8000G

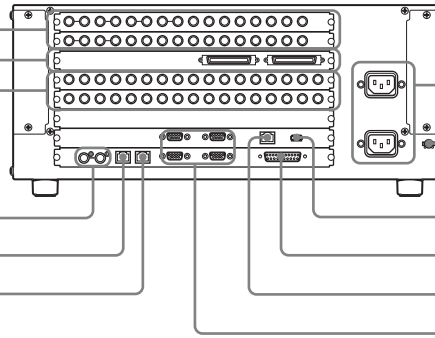
- ⑬ MONITOR OUT 49 to 56 connectors
- ⑫ DME 2B, 2A, 1B, and 1A connectors
- ⑪ PRIMARY INPUTS 1 to 80 connectors
- ⑩ OUTPUTS 1 to 48 and FC 1 to 4 connectors
- ⑨ REF INPUT connectors
- ⑧ DATA connector
- ⑦ CTRL connector



- ① ~ AC IN A, B, C, and D connectors
- ② \hbar terminal
- ③ FM DEVICE connector
- ④ GPI connector
- ⑤ FM DATA connector
- ⑥ REMOTE 1 to 4 connectors

MVS-8000GSF

- ⑪ PRIMARY INPUTS 1 to 34 connectors
- ⑫ DME 1B and 1A connectors
- ⑩ OUTPUTS 1 to 24 and FC 1, 2 connectors
- ⑨ REF INPUT connectors
- ⑧ DATA connector
- ⑦ CTRL connector



- ① ~ AC IN A, B connectors
- ② \hbar terminal
- ③ FM DEVICE connector
- ④ GPI connector
- ⑤ FM DATA connector
- ⑥ REMOTE 1 to 4 connectors

① ~ AC IN (AC power input)

A, B, C, and D connectors (3-pin): MVS-8000G

A, B connectors (3-pin): MVS-8000GSF

Connect to 100 to 240 V AC power supply with the optional AC power cords.

MVS-8000G: Depending on the configuration of your unit when shipped, the HK-PSU04 Power Supply Unit may not be installed. In that case, the AC IN C and AC IN D connectors are not used.

MVS-8000GSF: Depending on the configuration of your unit when shipped, the HK-PSU04 Power Supply Unit may not be installed. In that case, the AC IN B connector is not used.

Note

For information about installing an HK-PSU04 Power Supply Unit, contact your Sony service representative.

② \hbar (signal ground) terminal

Connect to the system ground.

③ FM (frame memory) DEVICE connector (IEEE1394 compliant)

This connector is for attaching an external hard disk drive for frame memory.

For details of hard disk drives that can be used with the MVS-8000G system, consult your Sony service representative.

④ GPI (General Purpose Interface) connector (D-sub 25-pin)

Connect to external devices for input and output of trigger signals. Up to eight inputs and eight outputs are possible, with input and output conditions set on the center control panel.

5 FM DATA (frame memory data) connector (RJ-45 compliant)

Connect to an Ethernet* switch. This is a dedicated LAN connector for image data.

6 REMOTE 1 to 4 connectors (D-sub 9-pin, RS-422A compliant)

These connectors are used to control the auxiliary bus of the MVS-8000G series from external devices, or to operate the MVS-8000G/MVS-8000GSF from editing control systems such as the BVE-9100.

Define the types of the connected devices on the center control panel.

7 CTRL (control) connector (RJ-45 compliant)

Connect to an Ethernet* switch.

The MVS-8000G system's center control panel is connected in the same way to the Ethernet switch to form a network for exchange of signals between the devices. This network is used primarily to control the various devices from the center control panel of the MVS-8000G system.

8 DATA connector (RJ-45 compliant)

Connect to an Ethernet* switch.

The MVS-8000G system's center control panel is connected in the same way to the Ethernet switch to form a network for exchange of signals between the devices. This network is used primarily for exchange of various types of data (key frame effects, snapshots, etc.) and still pictures of frame memory.

Cautions

- When you connect the FM DATA connector, DATA connector and CTRL connector of the unit to peripheral devices, use a shielded-type cable to prevent malfunction due to radiation noise.
- For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following port(s).
 - FM DATA (frame memory data) connector
 - CTRL (control) connector
 - DATA connectorFollow the instructions for the above port(s).

* Ethernet is a trademark of Xerox Corporation.
For information about Ethernet switches that can be used in an MVS-8000G system, contact your Sony service representative.

For more information about Ethernet switch connectors, see "MVS-8000G System Configuration" (page 13).

For detailed information about setting up the Ethernet switch, refer to the documentation supplied with the switch.

9 REF INPUT (reference video input) connectors (BNC-type)

If you wish to synchronize this unit to an external reference signal, input the reference signal. For an HDTV system, input an HD tri-level sync signal, black burst signal, or analog sync signal. For an SDTV system, input a black burst signal or analog sync signal.

The two connectors have a loop-through configuration. Signal input to one connector can be output from the other connector. If you will not be using the loop-through output, be sure to terminate the unused connector with the supplied 75Ω terminator.

10 OUTPUTS

1 to 48 connectors (BNC-type): MVS-8000G (MKS-8160G)

1 to 24 connectors (BNC-type): MVS-8000GSF (MKS-8162A)

These connectors output serial digital signals. You can assign them freely as program output, preview output, AUX output, and so on.

Outputs 1, 2, 13 to 16, 25*, 26*, 37 to 40* are each constituted by two BNC-type connectors, and outputs 3 to 12, 17 to 24, 27 to 36*, 41 to 48* are each constituted by one BNC-type connector.

Make output assignments on the MVS-8000G system center control panel.

The number of connectors (slots) varies according to whether optional MKS-8160G (MVS-8000G) or MKS-8162A (MVS-8000GSF) boards are installed.

* These connectors can be integrated into the MVS-8000G only.

Refer to the User's Guide for information about signals that may be assigned.

FC1 to 4 (slots 13, 15) connectors (BNC-type): MVS-8000G (MKS-8160G, MKS-8450G)

FC1 and 2 (slot 2) connectors (BNC-type): MVS-8000GSF (MKS-8450G)

The connectors output signals converted with the format converter function.

Assign the outputs on the center control panel of the MVS-8000G system.

11 PRIMARY INPUTS

1 to 68 connectors (BNC-type): MVS-8000G (MKS-8110G)

1 to 34 connectors (BNC-type): MVS-8000GSF (MKS-8110G)

These connectors allow you to input up to 68 serial digital video signals (MVS-8000G) or up to 34 serial digital video signals (MVS-8000GSF).

The number of these connectors (slots) depends on the number of MKS-8110G boards that are installed in the unit.

69 to 80 connectors (BNC-type): MVS-8000G (MKS-8111G)

These provide for an extra 12 serial digital video signals. Use these connectors when 69 inputs or more are used. They can be integrated into the MVS-8000G only.

12 DME (Digital Multi Effects input and output) 2B, 2A, 1B and 1A connectors (MDR 68-pin): MVS-8000G (MKS-8170G)

1A and 1B connectors (MDR 68-pin): MVS-8000GSF

Connect to the MVE-8000A or MVE-9000 with the special cable supplied with each unit.

You can connect up to two MVE-8000A or MVE-9000 Multi format DME Processor units to the MVS-8000G. Connect the first unit to the DME 1A/1B connectors and the second unit to the DME 2A/2B connectors.

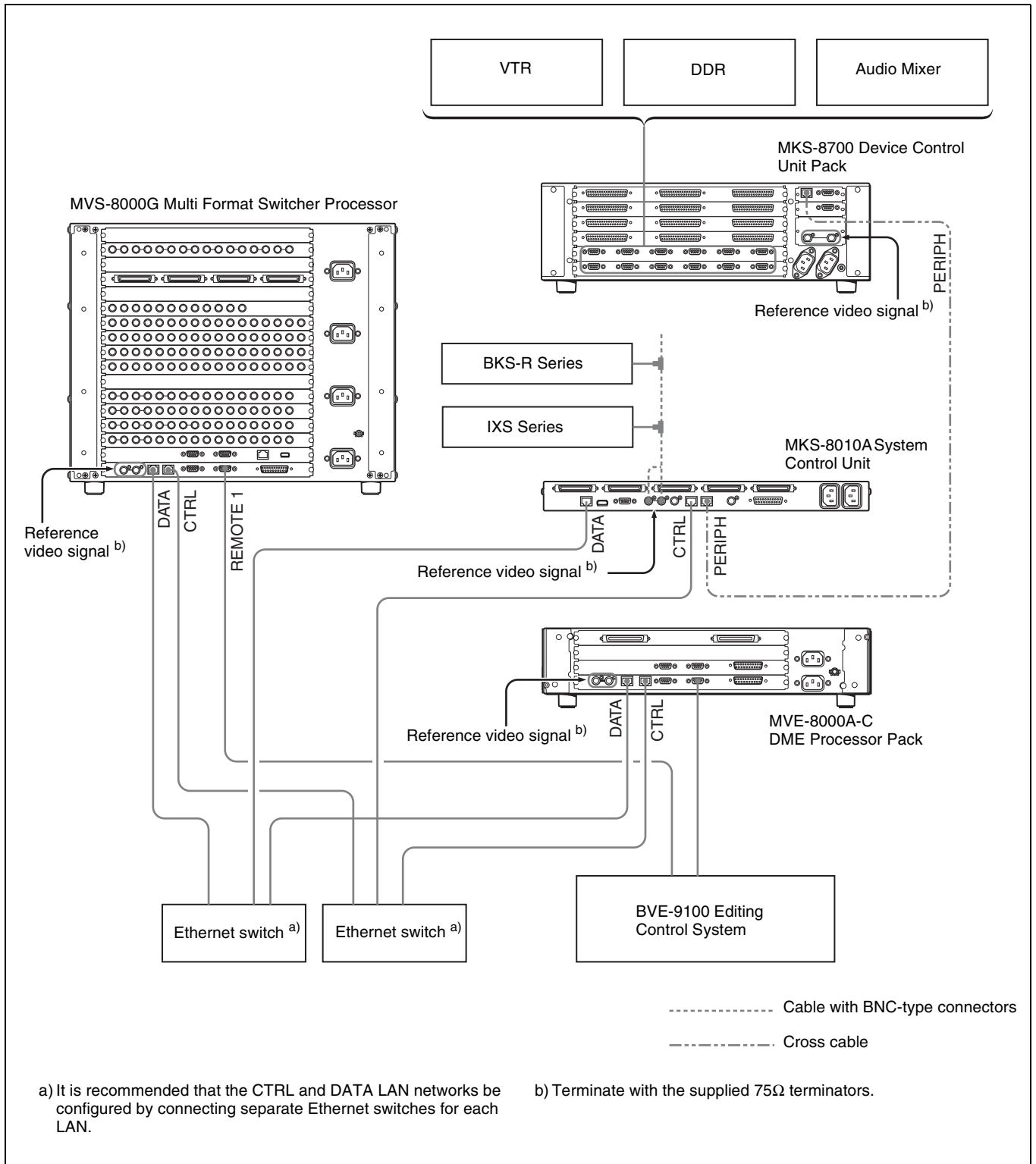
13 MONITOR OUT connectors 49 to 56 (BNC-type) (MKS-8161M)

These are used for auxiliary output to a primary input monitor or external device. These outputs are useful for outputting a primary input signal with as little delay as possible.

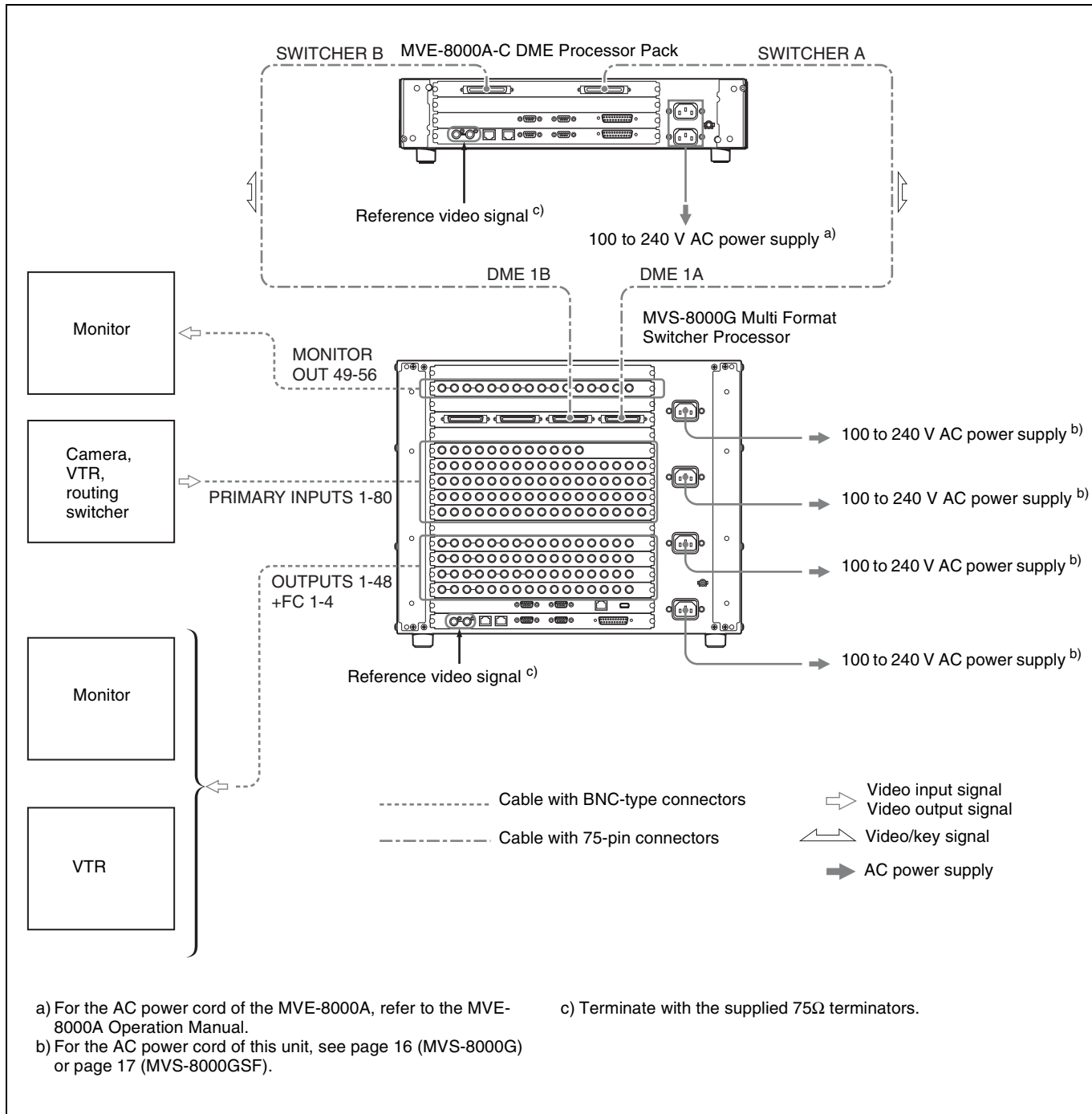
These connectors can be integrated into the MVS-8000G only.

Example System Configuration

MVS-8000G System Configuration



Flow of Video Signals



Power Supply Unit Status Indicators

The power supply unit status indicators show the status of the power supply unit during operation and when the unit is powered on. Whenever a power error is detected, it is reflected immediately by the indicator.

Meaning of status indicator displays

Indicator color	Status	Description	Steps to take
Green	Lit	Operating normally	–
Red	Lit	Power supply unit fan fault	Exchange the fan unit
–	Not lit	Power supply unit fault	Exchange the power unit

Note

When the unit is powered on, the status indicators may light momentarily in red and a whining sound may be heard. This is not a malfunction. Power all of the installed power supply units on.

Specifications

The following specifications show the reference performance for this unit and individual option boards/units.

Design and specifications are subject to change without notice.

MVS-8000G Multi Format Switcher Processor

General

Power requirements

100 to 240 V \pm 10% AC, 50/60 Hz

Current consumption

100 V: 12 A, 240 V: 5 A

Peak inrush current

(1) Power ON, current probe method:

100 A (100 V), 180 A (240 V)

(2) Hot switching inrush current,

measured in accordance with

European standard EN55103-1:

165 A (230 V)

Operating temperature

5°C to 40°C (41°F to 104°F)

Performance guaranteed temperature

10°C to 35°C (50°F to 95°F)

Storage temperature

–20°C to +60°C (–4°F to +140°F)

Operating humidity

10% to 90%

Dimensions (w/h/d, excluding projections)

482×354×520 mm

(19×14×20¹/₂ inches)

Mass

Approx. 49 kg (108 lb)

(when equipped with all installable option boards and option power supply unit)

Remote control connectors

CTRL RJ-45, complies with 100Base-TX standard

DATA RJ-45, complies with 100Base-TX standard

REMOTE 1, 2, 3, 4

D-sub 9-pin, female

Comply with RS-422A standard

Data transfer rate: 38.4 Kbps

GPI

D-sub 25-pin, female

TTL inputs: 8

Relay contact outputs: 4 (30 V AC/DC, 0.1 A)
Open collector outputs: 4

Reference input

REF INPUT BNC type, 75Ω with loop-through output
HDTV systems:
HD tri-level sync/SDTV analog black burst/SDTV analog sync
SDTV systems:
Analog black burst/analog sync
Return loss -40 dB

DME input and output

DME 1A, DME 1B, DME 2A and DME 2B
MDR 68-pin
Signal format LVDS

Frame memory input and output

FM DATA RJ-45, complies with 100Base-TX standard
FM DEVICE Complies with IEEE1394

Video input

Inputs 17 (BNC-type)
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB
Cable length HDTV system: 100 m (5C-FB cable, BELDEN1694 or equivalent)
SDTV system: 200 m (5C-FB cable, BELDEN1694 or equivalent)

Video output

Outputs 24 (BNC-type)
1, 2, 13 to 16: BNC 2 outputs
3 to 12, 17 to 24, FC1, FC2: BNC 1 outputs
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB

AC input

AC IN A, B, C, D
3-pin AC connector

Accessories supplied

75Ω terminator (1)

Brackets (4)
Support angles (2)
Screws (+B4×10) (8)
Screws (+PSW4×10) (8)
Operation Manual (1)
Installation Manual (1)

Accessories not supplied

AC power cord (for USA and Canada only) (125 V 10 A 2.4 m (8 ft)) (Part No.: 1-551-812-31)
AC power cord (for Europe only) (250 V 10 A 2.4 m (8 ft)) (Part No.: 1-782-929-12)

MVS-8000GSF Multi Format Switcher Processor

General

Power requirements 100 to 240 V ±10% AC, 50/60 Hz
Current consumption 100 V: 7 A, 240 V: 3 A
Peak inrush current (1) Power ON, current probe method: 60 A (100 V), 130 A (240 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 100 A (230 V)
Operating temperature 5°C to 40°C (41°F to 104°F)
Performance guaranteed temperature 10°C to 35°C (50°F to 95°F)
Storage temperature -20°C to +60°C (-4°F to +140°F)
Operating humidity 10% to 90%
Dimensions (w/h/d, excluding projections) 482×177×520 mm (19×7×20¹/₂ inches)
Mass Approx. 28 kg (61 lb 11 oz) (when equipped with all installable option boards and option power supply unit)

Remote control connectors

CTRL RJ-45, Complies with 100Base-TX standard
DATA RJ-45, Complies with 100Base-TX standard
REMOTE 1, 2, 3, 4
D-sub 9-pin, female
Comply with RS-422A standard
Data transfer rate: 38.4 Kbps
GPI D-sub 25-pin, female
TTL inputs: 8

Relay contact outputs: 4 (30 V AC/DC, 0.1 A)
Open collector outputs: 4

Screws (+PSW4×10) (8)
Operation Manual (1)
Installation Manual (1)

Reference input

REF INPUT BNC type, 75Ω with loop-through output
HDTV system: HD tri-level sync/SDTV analog black burst/SDTV analog sync
SDTV system: Analog black burst/analog sync
Return loss -40 dB

DME input and output

DME 1A and DME 1B MDR 68-pin
Signal format LVDS

Frame memory input and output

FM DATA RJ-45, complies with 100Base-TX standard
FM DEVICE Complies with IEEE1394

Video input

Inputs 17 (BNC-type)
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB
Cable length HDTV system: 100 m (5C-FB cable, BELDEN1694 or equivalent)
SDTV system: 200 m (5C-FB cable, BELDEN1694 or equivalent)

Video output

Outputs 12 (BNC-type)
1, 2: BNC 2 outputs
3 to 12, FC1, FC2: BNC 1 outputs
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15dB

AC input

AC IN A, B 3-pin AC connector

Accessories supplied

75Ω terminator (1)
Brackets (4)
Support angles (2)
Screws (+B4×10) (8)

Accessories not supplied

AC power cord (for USA and Canada only) (125 V 10 A 2.4 m (8 ft)) (Part No.: 1-551-812-31)
AC power cord (for Europe only) (250 V 10 A 2.4 m (8 ft)) (Part No.: 1-782-929-12)

MKS-8110G 17-Input Board

General

Power requirements 12 V DC
Power consumption Max. 10 W
Dimensions (w/d) 274×94 mm (10⁷/₈×3³/₄ inches)
Mass Approx. 1 kg (2 lb 3 oz)

Input

Inputs 17 (BNC-type)
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB
Cable length HDTV system: 100 m (5C-FB cable, BELDEN1694 or equivalent)
SDTV system: 200 m (5C-FB cable, BELDEN1694 or equivalent)

Accessories supplied

Operation and Installation Guide (1)
(supplied only when product is purchased separately)

MKS-8111G Additional 12-Input Board

General

Power requirements 12 V DC
Power consumption Max. 10 W
Dimensions (w/d) 274×94 mm (10⁷/₈×3³/₄ inches)
Mass Approx. 1 kg (2 lb 3 oz)

Input

Inputs 12 (BNC-type)

Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB
Cable length HDTV: 100 m (5C-FB cable,
BELDEN1694 or equivalent)
SDTV: 200 m (5C-FB cable,
BELDEN1694 or equivalent)

Accessories supplied

Operation and Installation Guide (1)
(supplied only when product is purchased separately)

MKS-8160G 24-Output Board Set

General

Power requirements 12 V DC
Power consumption Max. 70 W
Dimensions (w/d) OUT board: 317×380 mm
(12¹/₂×15 inches)
CN board: 274×94 mm
(10⁷/₈×3³/₄ inches) (two CN boards
supplied)
Mass Approx. 2.5 kg (5 lb 8 oz)

Output

Outputs 24 (BNC-type)
25, 26, 37 to 40: BNC 2 outputs
27 to 36, 41 to 48, FC1, FC2: BNC 1
outputs
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB

Accessories supplied

Operation and Installation Guide (1)
(supplied only when product is purchased separately)

MKS-8161M Monitor Output Board

General

Power requirements 12 V DC
Power consumption Max. 10 W
Dimensions (w/d)

274×94 mm (10⁷/₈×3³/₄ inches)
Mass Approx. 1 kg (2 lb 3 oz)

Output

Outputs 8 (BNC-type), each with 2 outputs
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB

Accessories supplied

Operation and Installation Guide (1)
(supplied only when product is purchased separately)

MKS-8162A 12-Output Connector Board

General

Power requirements 12 V DC
Power consumption Max. 10 W
Dimensions (w/d) 274×94 mm (10⁷/₈×3³/₄ inches)
Mass Approx. 1 kg (2 lb 3 oz)

Output

Outputs 12 (BNC-type)
13 to 16: BNC 2 outputs
17 to 24: BNC 1 outputs
Signal format SMPTE292M/SMPTE259M-C
Signal level 0.8 V_{p-p} ±10%
Signal transfer rate 1.5 Gbps/270 Mbps
Return loss -15 dB

Accessories supplied

Operation and Installation Guide (1)
(supplied only when product is purchased separately)

MKS-8170G DME Interface Board

Power requirements 12 V DC
Power consumption Max. 50 W
Dimensions (w/d) 317×380 mm (12¹/₂×15 inches)
Mass Approx. 1.5 kg (3 lb 4 oz)
Accessories supplied

Operation and Installation Guide (1)
(supplied only when product is
purchased separately)

Max. 60 A
Dimensions (w/h/d)
94×83×396 mm (3³/₄×3³/₈×15⁵/₈ inches)
Mass
Approx. 3 kg (6 lb 9 oz)
Accessories supplied

MKS-8210G Mix/Effect Board

Power requirements
12 V DC
Power consumption
Max. 150 W
Dimensions (w/d)
317×380 mm (12¹/₂×15 inches)
Mass
Approx. 2 kg (4 lb 6 oz)
Accessories supplied
Operation and Installation Guide (1)
(supplied only when product is
purchased separately)

Operation and Installation Guide (1)
(supplied only when product is
purchased separately)

MKS-8442G Frame Memory Board

Power requirements
12 V DC
Power consumption
Max. 100 W
Dimensions (w/d)
317×380 mm (12¹/₂×15 inches)
Mass
Approx. 2 kg (4 lb 6 oz)
Accessories supplied
Operation and Installation Guide (1)
(supplied only when product is
purchased separately)

MKS-8450G Format Converter Board

Power requirements
12 V DC
Power consumption
Max. 50 W
Dimensions (w/d)
317×380 mm (12¹/₂×15 inches)
Mass
Approx. 1.5 kg (3 lb 4 oz)
Accessories supplied
Operation and Installation Guide (1)
(supplied only when product is purchased
separately)

HK-PSU04 Power Supply Unit

Power requirements
Input power: 100 to 240 V ±10% AC,
50/60 Hz
Output power: 12 V DC ±0.3 V
Current consumption
10 to 5 A
Secondary power supply

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