

SONY®

DME PROCESSOR PACK

MVE-8000A-C

MULTI FORMAT DME PROCESSOR

MVE-8000A

MKE-8020A MKE-8021A MKE-8040A HK-PSU02

OPERATION MANUAL English

1st Edition (Revised 2)

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

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

THIS APPARATUS MUST BE EARTHED.

WARNUNG

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch 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 d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écartier 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.



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	Type SJT, three 16 or 18 AWG wires
Length	Minimum 1.5 m, Less than 2.5 m (8 ft 3 in)
Rating	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.

AVERTISSEMENT: CET AVERTISSEMENT EST VALABLE POUR LES AUTRES PAYS.

1. Utiliser un cordon d'alimentation approuvé (conducteur d'alimentation 3 âmes)/connecteur d'appareil/prise avec contacts de mise à la terre conforme aux règles de sécurité de chaque pays si applicable.
2. Utiliser un cordon d'alimentation approuvé (conducteur d'alimentation 3 âmes)/connecteur d'appareil/prise conforme aux valeurs nominales (tension, ampérage) correctes.

S'adresser à un personnel de service qualifié pour toute question concernant l'emploi du cordon d'alimentation/ connecteur d'appareil/prise ci-dessus.

WARNUNG: DIESE WARNUNG GILT FÜR ANDERE LÄNDER.

1. Verwenden Sie Netzkabel(dreiadrig), Geräteanschlüsse und Netzkabelstecker mit Masseleitung, die den Sicherheitsrichtlinien des jeweiligen Landes entspricht.
2. Verwenden Sie Netzkabel (dreiadrig), Geräteanschlüsse und Netzkabelstecker mit Masseleitung, die den vor Ort herrschenden Spannungsanforderungen (Spannung, Stromstärke) entsprechen.

Bei Frage über die Eignung und Sicherheit von Netzkabeln (dreiadrig), Geräteanschlüssen und Netzkabelsteckern wenden Sie sich bitte an einen qualifizierten Electrotechniker.

For the customers in the USA

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.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

(MKE-8020A/8021A/8040A, HK-PSU02 only)

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 (MKE-8020A/8021A/8040A, HK-PSU02 only)

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

Pour les utilisateurs au Canada (MKE-8020A/8021A/8040A, HK-PSU02 uniquement)

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

For the customers in Europe (MVE-8000A only)

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European standards:

- EN60950: 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 MVE-8000A)

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie (89/336/EWG) sowie die Niederspannungsrichtlinie (73/23/EWG) der EG-Kommission. Angewandte Normen:

- EN60950: 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 (MVE-8000A uniquement)

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) et à la Directive sur les basses tensions (73/23/CEE) émises par la Commission de la Communauté européenne.

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

- EN60950: 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 (MKE-8020A/8021A/8040A, HK-PSU02 only)

This product with the CE marking complies with the EMC Directive (89/336/EEC) 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 (nur MKE-8020A/8021A/8040A, HK-PSU02 only)

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie (89/336/EWG) der EG-Kommission.

Angewandte Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
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Pour les clients européens (MKE-8020A/8021A/8040A, HK-PSU02 uniquement)

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) émise par la Commission de la Communauté européenne. La conformité à cette directive implique la conformité aux normes européennes suivantes:

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

Periodic inspections

To guarantee safe long-term operation, periodic inspections are recommended. Please contact your Sony representative for detailed information about the content and cost of periodic inspections.

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Overview

The Sony MVE-8000A-C DME Processor Pack is a multifunction digital video effects unit for use in a system configured around an MVS-8000/8000A Multi Format Switcher System.

The MVE-8000A-C is a generic name of the DME processor unit having option boards installed in it.

Features

Multi format support

This unit supports both HDTV and SDTV signal formats, which can be easily selected from the center control panel for the MVS-8000/8000A system without exchanging expansion boards. The wide range of supported signal formats allows the unit to be used in many different video production environments. The following signal formats are supported.

- SDTV formats: 480i/59.94, 576i/50
- HDTV formats: 1080i/50, 1080i/59.94, 1080i/60, 1080p/23.976sF, 1080p/24sF, 1080p/25sF, 1080p/29.97sF, 1080p/30sF, 720p/59.94

Rich variety of effects

The unit supports a wide variety of effects and functions such as 3D linear transforms (including expand and reduce) and borders. The effects and functions supported are as follows.

- 3D linear transforms (expand, reduce, move, rotate)
- Border / Crop
- Defocus / Blur
- Multi-move
- Color modifiers (sepia, monochrome, negative, posterization, solarization, contrast)
- Mosaic
- Freeze
- Lighting
- Trail
- Background
- Graphics display
- Drop shadow(2-channel effect)
- Combiner
- Brick (3-channel effect)

Up to four DME channels in a single unit

DME boards can be installed to enable up to four independent DME channels in a single unit, for space savings and energy efficiency. Because there are multiple internal channels, up to 4-channel effects can be applied without making any special connections.

Linked operation with switcher processor

This unit is connected to the MVS-8000/8000A Multi Format Switcher Processor by a special interface, which allows DME wipes, processed keys and a wide variety of other DME effects to be used as if they were switcher functions. All DME operations can be controlled from the MVS-8000/8000A system's center control panel.

Optional backup power supply

Installation of an optional HK-PSU02 Power Supply Unit provides backup power in addition to the power supply unit supplied as standard equipment. This reduces the risk of power trouble and increases the reliability of live broadcast systems.

Overview of the MVE-8000A-C Components

MVE-8000A Multi Format DME Processor

This is a cabinet (size: EIA 2RU) in which to install option boards to provide multi-format DME processing capabilities.

The option boards are as follows.

Board name	Maximum installable number of boards
MKE-8020A	1 set ^{a)}
MKE-8021A	1 set ^{a)}
MKE-8040A	2 boards ^{b)}

a) At least one of either set is required.

b) At least one board is required.

MKE-8020A MVS Interface Board

This board provides a special video signal interface for the MVS-8000/8000A Multi Format Switcher Processor.

MKE-8021A Input/Output Board

This board enables input and output of video signals via an SDI interface.

MKE-8040A Effects Board

This board enables 2-channel DME effects. Up to two boards can be installed to provide 2-channel DME effects.

HK-PSU02 Power Supply Unit

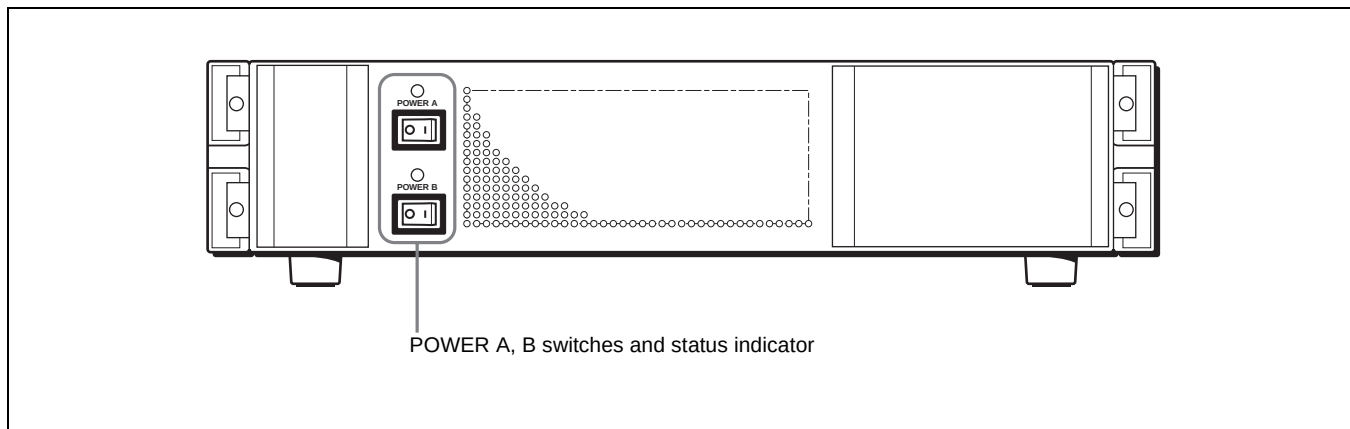
A backup power supply unit. By installing one backup unit in the MVE-8000A, you can back up the system's power supply.

Optional accessories

RMM-10 Rack Mount Kit

Location and Function of Parts

Front Panel



Power A, B 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.

Depending on the system’s configuration when shipped, there may be no optional HK-PSU02 Power Supply Unit installed. In this case, the only available POWER switch is A (there is no switch B).

The unit is powered on when either of the two POWER switches (A or B) is turned on.

With an HK-PSU02 unit installed, the system continues to function normally as long as either of the two power supply units is operating normally.

Caution

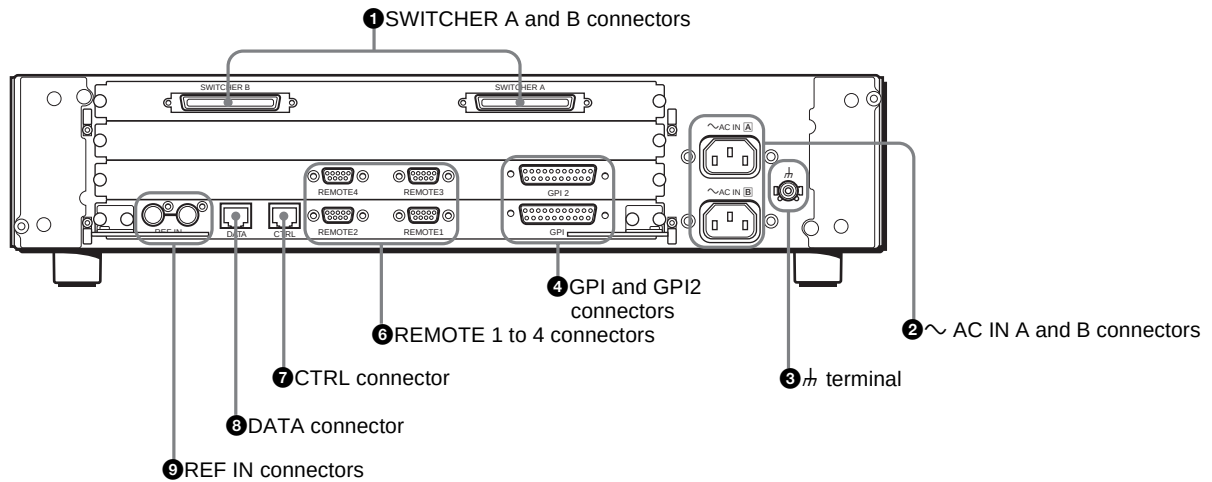
When installing the HK-PSU02 in your unit, be sure to contact your Sony service representative.

Note

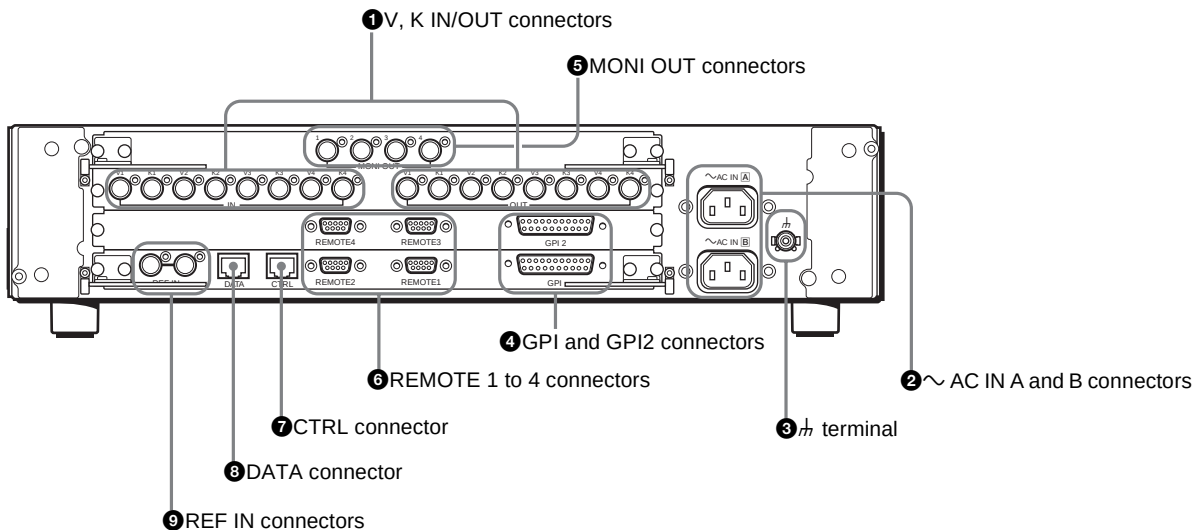
If a status indicator does not light when you turn a POWER switch on, there may be a fault in the power circuits. Turn the POWER switch off and contact your Sony service representative.

Rear Panel

This figure shows the rear panel when one MKE-8020A is installed in the unit.



This figure shows the rear panel when one MKE-8021A is installed in the unit.



❶ SWITCHER (switcher I/O) A and B connectors (MDR 68-pin) (MKE-8020A)

Connect with the supplied special cable to the DME 1A and 1B connectors of the MVS-8000/8000A Multi Format Switcher Processor.

Each connector handles two channels of video signal input and output. Therefore, when this unit is configured for one or two channels (with one MKE-8040A board installed), you do not need to connect the SWITCHER B connector. If you are connecting a second MVE-8000A Multi Format DME Processor to the MVS-8000/8000A, connect the

SWITCHER A and B connectors on the second processor to the DME 2A and DME 2B connectors on the MVS-8000/8000A.

❶ V, K IN/OUT (video and key input and output) connectors (BNC type) (MKE-8021A)

Used for SDI interface input and output of video signals between this unit and the switcher or external video devices.

② ~ AC IN (AC power input) A and B connectors (3-pin)

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

③ $\hbar$ (signal ground) terminal

Connect to the system ground.

④ GPI (General Purpose Interface) and GPI2 connectors (D-sub, 25-pin)

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

⑤ MONI OUT (monitor output) connectors (BNC type) (MKE-8021A)

Used to output system channel video keys and graphics to a monitor.

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

Connect to control this unit from a BVE-9100 or other editing control system.

⑦ CTRL (control) connector (RJ-45)

Connect to an Ethernet switch*.

The MVS-8000/8000A Multi Format Switcher Processor and the MVS-8000/8000A system's center control panel are 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.

* Ethernet is a trademark of XEROX Corporation.

For information about Ethernet switches that can be used in an MVS system, contact your Sony service representative.

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

For more information about Ethernet switch connectors, see "MVS-8000/8000A System Configuration" on page 10.

⑧ DATA connector (RJ-45)

Connect to an Ethernet switch.

The MVS-8000/8000A Multi Format Switcher Processor and the MVS-8000/8000A system's center control panel are 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.).

Caution

For safety, do not connect the connector for peripheral

device wiring that might have excessive voltage to the following ports.

- CTRL connector
- DATA connector

Follow the instructions for the above ports.

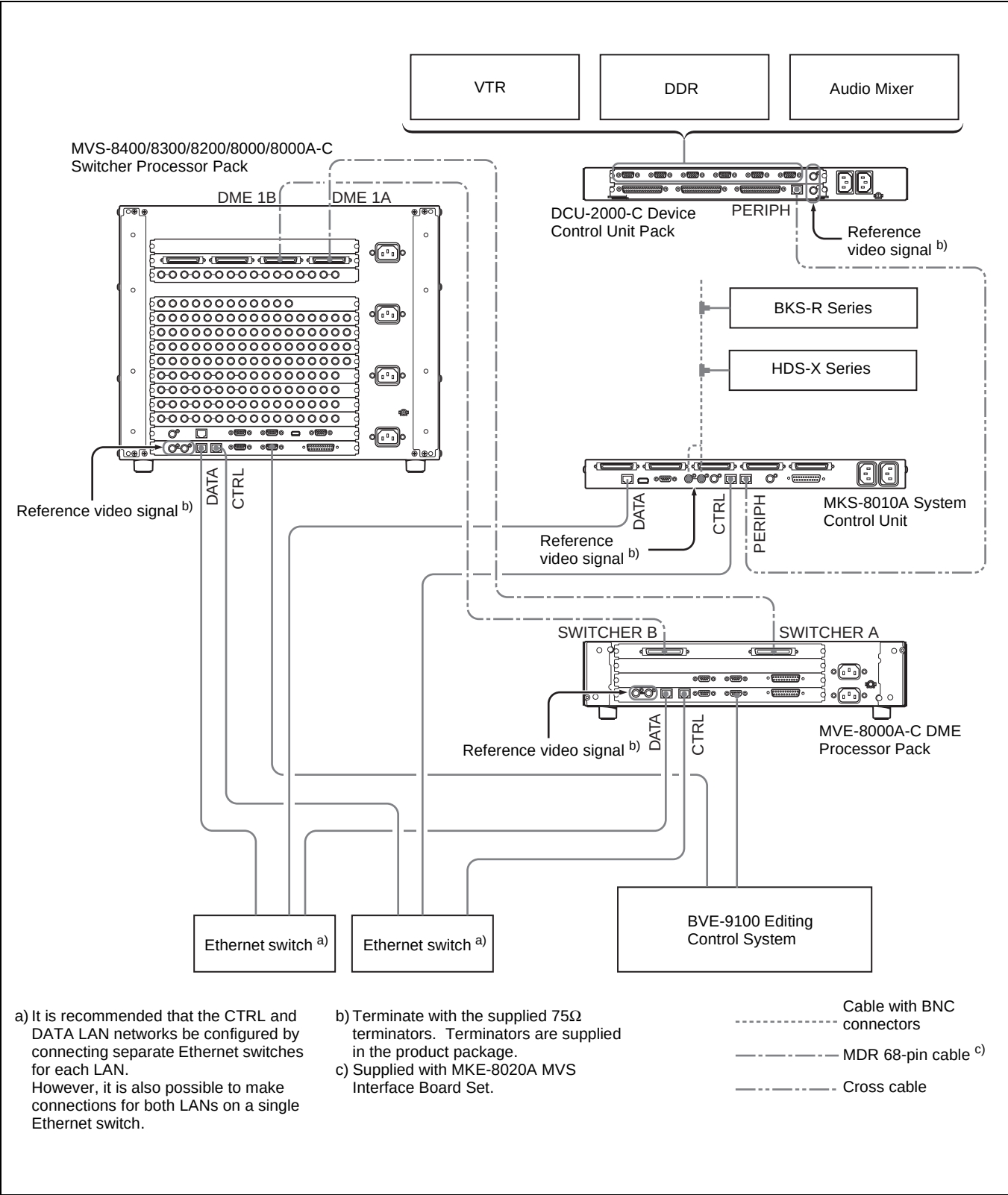
⑨ REF IN (reference video signal input) connectors (BNC type)

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.

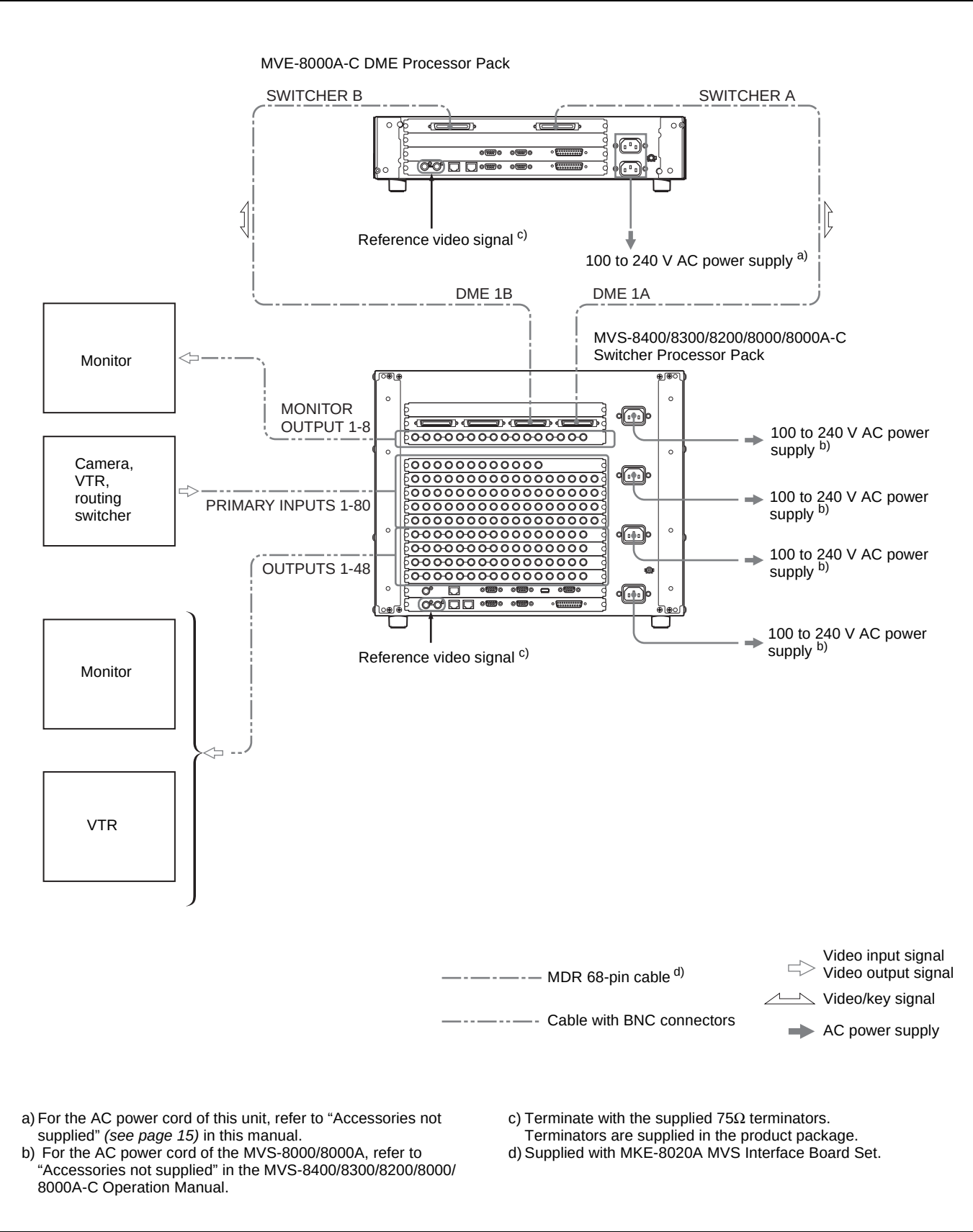
The two connectors have a loop-through configuration. Signal input to one connector can be output from the other connector. If you will not be using the loop-through output, be sure to terminate the unused connector with the supplied 75 Ω terminator.

Example System Configuration (MKE-8020A Installed)

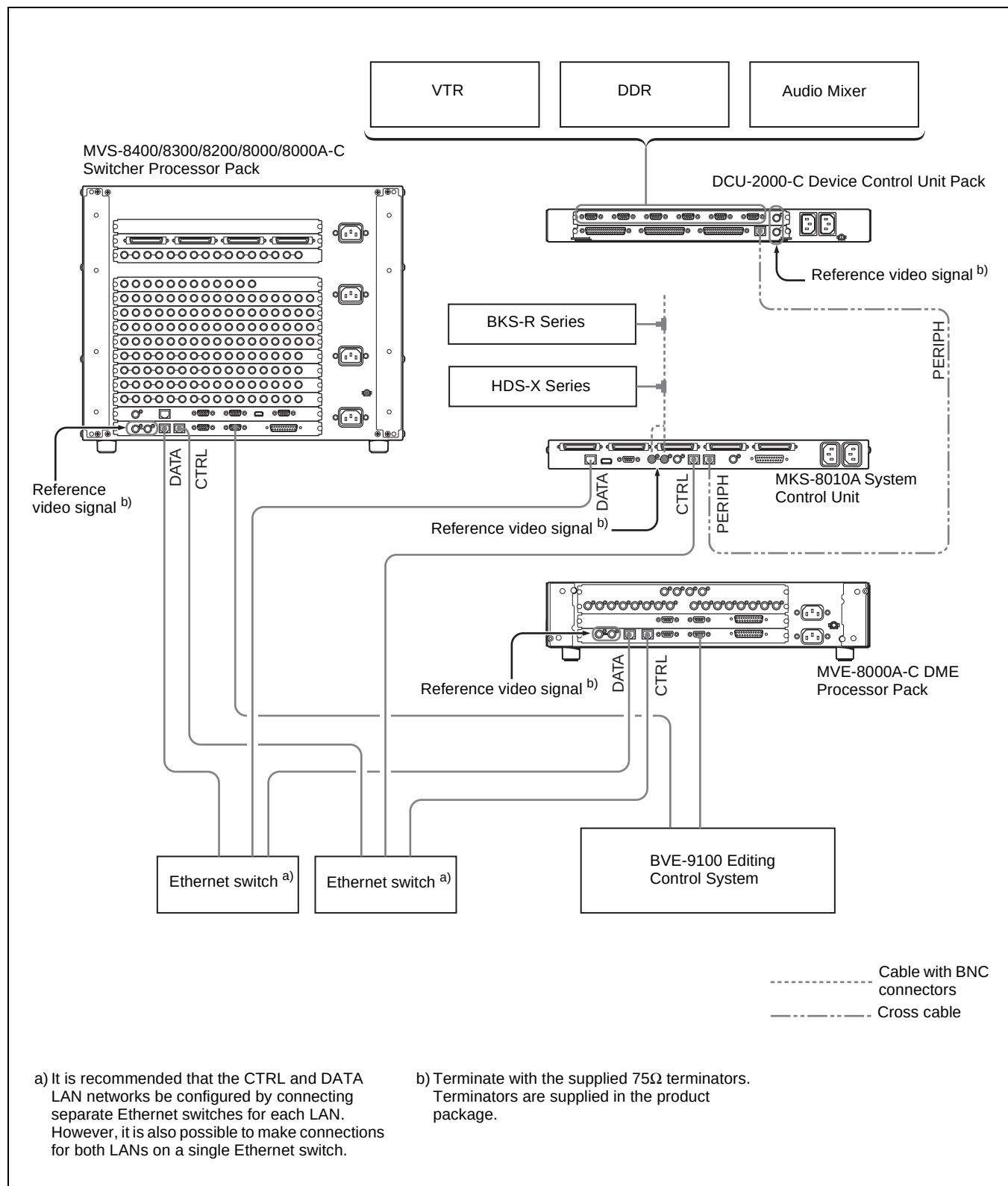
MVS-8000/8000A System Configuration



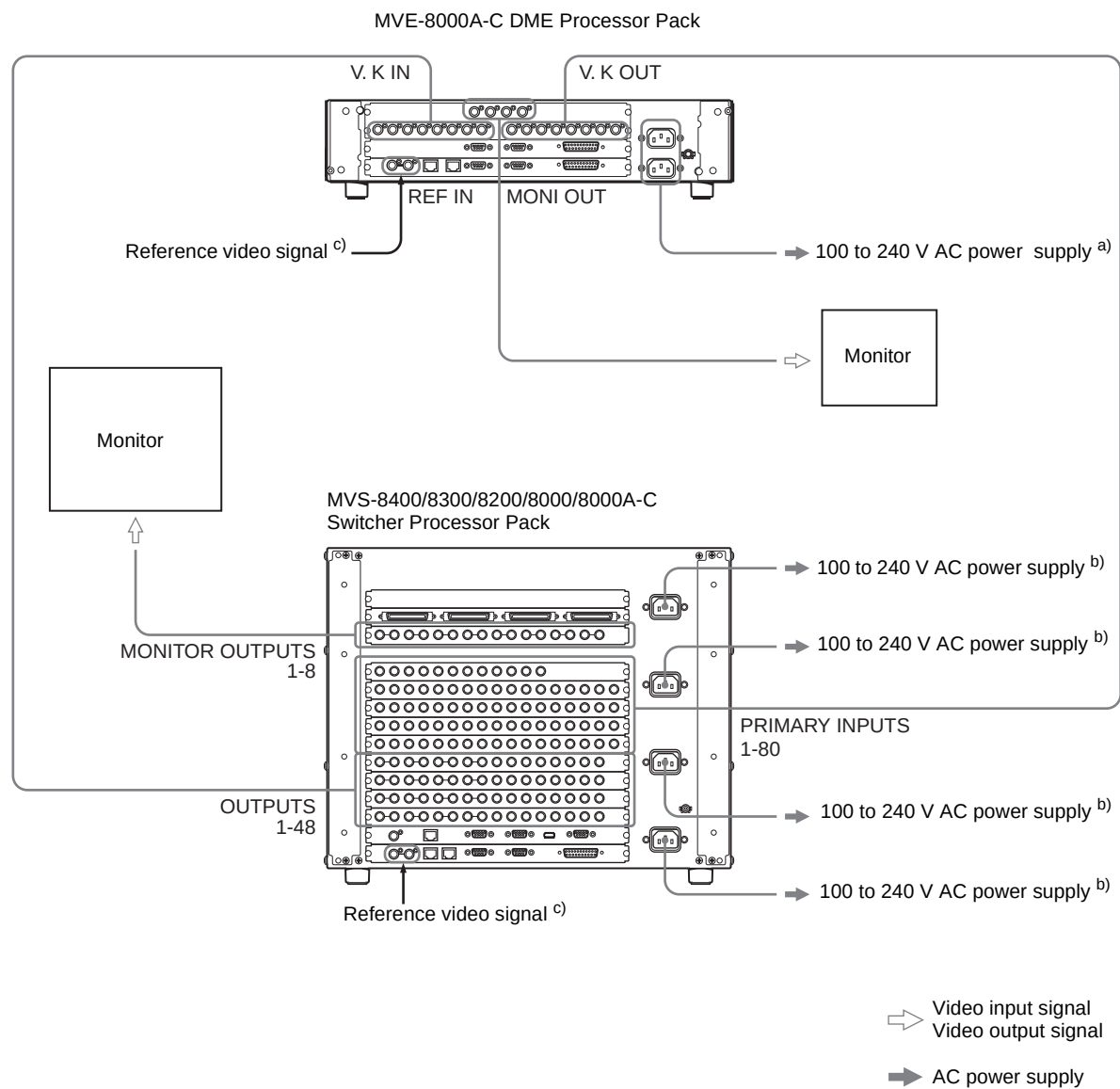
Flow of Video Signals



MVS-8000/8000A System Configuration



Flow of Video Signals



a) For the AC power cord of this unit, refer to "Accessories not supplied" (see page 15) in this manual.

b) For the AC power cord of the MVS-8000/8000A, refer to "Accessories not supplied" in the MVS-8400/8300/8200/8000/8000A-C Operation Manual.

c) Terminate with the supplied 75 Ω terminators. Terminators are supplied in the product package.

Power Supply Unit Status Indicator

The power supply unit status indicator shows 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

Specifications

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

Design and specifications are subject to change without notice.

MVE-8000A Multi Format DME Processor

General

Power requirements

100 to 240 V AC, 50/60 Hz

Power consumption

2.8 to 1.2 A

Peak inrush current

- (1) Power ON, current probe method:
15 A (100 V), 66 A (240 V)
- (2) Hot switching inrush current,
measured in accordance with
European standard EN55103-1: 50 A
(230 V)

Performance temperature

5°C to 40°C (41°F to 104°F)

Operating 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)

440×87.5×520 mm
(17 ³/₈ × 3 ¹/₂ × 20 ¹/₂ inches)

Mass

Approx. 16 kg (35 lb 4 oz)
(when equipped with all installable
option boards)

Reference input

REF IN 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

Control connectors

CTRL RJ-45
 Complies with 100 Base-TX standard
DATA RJ-45
 Complies with 100 Base-TX standard

REMOTE 1 to 4

D-sub 9-pin, female
Complies with RS-422A standard
Data transfer rate: 38.4 Kbps
GPI, GPI2 D-sub 25-pin, female
 TTL inputs: 8
 Relay contact outputs: 4
 (30 V AC/DC, 0.1 A)
 Open collector outputs: 4

AC input

AC IN A, B 3-pin AC connector

System Delay

1 frame (in other than 720p format)
2 frames (in 720p format)

Accessories supplied

75Ω terminator (1)
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.: 1-557-377-11)
AC power cord (for Europe only) (250 V 10 A 2.4 m
(8 ft)) (Part No.: 1-782-929-22)

MKE-8020A MVS Interface Board

General

Dimensions (w/d)

278×94 mm
(11×3 ³/₄ inches)

Mass

Approx. 1 kg (2 lb 3 oz)

Video signal inputs and outputs

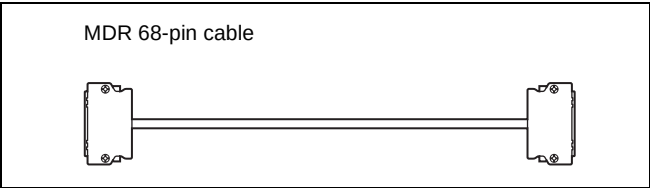
SWITCHER A, SWITCHER B

Connectors MDR 68-pin
Signal format LVDS (special format)

Accessories supplied

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

MDR 68-pin cables (Part No.:1-823-450-11) (2)



Cable holder (1)

MKE-8021A Input/Output Board

General

Power requirements 12 V DC
Power consumption Approx. 2 A
Dimensions (w/d) 278×94 mm (11×3³/₄ inches)
Mass Approx. 1 kg

Video signal inputs and outputs

IN V1 to V4, IN K1 to K4, OUT V1 to V4, OUT K1 to K4, MONI OUT

Connector BNC type
Inputs/Outputs Inputs: 8, Outputs: 12
Signal format HD: SMPTE 292M
SD: SMPTE 259M-C
Signal level 0.8 Vp-p ±10%
Signal transfer rate HD: 1.5 Gbps
SD: 270 Mbps
Return loss 15dB
Cable length HD: 100 m (5C-FB cable, BELDEN1694 or equivalent)
SD: 200 m (5C-2V cable, BELDEN8281 or equivalent)

Accessories not supplied

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

MKE-8040A Effects Board

Power requirements 12 V DC
Power consumption Approx. 5 A

Dimensions (w/d) 317×380 mm (12 ¹/₂×15 inches)
Mass Approx. 2 kg (4 lb 6 oz)
Accessories supplied Operation and Installation Guide (1)
(supplied only when product is purchased separately)

HK-PSU02 Power Supply Unit

Power requirements 100 to 240 V AC, 50/60 Hz
Power consumption 100 V: 10 A, 240 V: 5 A
Peak inrush current (1) Power ON, current probe method: 110 A (100 V), 220 A (240 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 40 A (230 V)
Output power 12 V DC ±0.5 V
Secondary power supply 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 Operation and Installation Guide (1)
(supplied only when product is purchased separately)

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For Customer in China

根据中华人民共和国信息产业部第39号令《电子信息产品污染控制管理办法》及标准中要求的“有毒有害物质或元素名称及含量”等信息，本产品相关信息请参考以下链接：

<http://pro.sony.com.cn>

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Sony Corporation

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

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