

SONY

MASTER SETUP UNIT

MSU-700

OPERATION MANUAL English

1st Edition (Revised 2)

Serial No. 10001 and Higher (UC)

Serial No. 40001 and Higher (CE)

Serial No. 50001 and Higher

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.

VORSICHT

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 einem Fachmann.

For the customers in the USA

WARNING

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.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiées dans le Règlement sur le brouillage radioélectrique.

For the customers in Europe

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung

Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

Für Kunden in Deutschland

Dieses Gerät ist nur für den Gebrauch in Gewerbe und Leichtindustrie bestimmt. Es entspricht der Klasse A, es erfüllt nicht die Grenzwerte der Klasse B. In Deutschland muß der Erwerber eine spezielle Betriebserlaubnis bei der zuständigen Außenstelle des BAPT beantragen, um dieses Gerät betreiben zu dürfen.

For the Customers in the United Kingdom

WARNING

THIS APPARATUS MUST BE EARTHED.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow: Earth

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \perp or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Table of Contents

Overview	2
Location and Function of Parts and Controls	3
Operation Panel	3
Connector Panel	12
Specifications	13

Manuals for the BVP-700-series video camera system

Three types of manuals are provided for the BVP-700-series video camera system: an Operation Manual, a Maintenance Manual, and a System Manual. The Operation and Maintenance Manuals are provided for each device used in the system, and the System Manual is provided as an option. In the Operation Manual, specific functions and

characteristics of the device, such as features, functions of each part and specifications, are described.

In the Maintenance and System Manuals, you will find general information on the system, such as possible system configurations, the setup method, connections, and system preparations and operations.

Overview

The MSU-700 Master Setup Unit is designed for remote control of the BVP-700-series Color Video Camera via the CCU-700/700P Camera Control Unit. The unit is connected to the CCU-700/700P Camera Control Unit (or the CNU-700 Camera Command Network Unit, which is connected to the CCU-700/700P) by a special cable of up to 200 m (656 feet) in length and controls the camera functions which are used most frequently in basic applications from a distance.

The principal features of the MSU-700 are as follows.

Integral control of the camera system

When the camera network command unit is used, 12 video cameras standard or 24 video cameras maximum can be controlled from a single MSU-700. Indicators and buttons light or flash to indicate the status of the system operation. Also, guard frames are provided to protect against accidental use of those buttons vital to camera operation. These features ensure easy and error-free use of this unit.

Touch panel for various operations

In addition to the buttons and controls, the MSU-700 has a touch panel which permits various items to be selected and adjusted in menu format.

Controlling the picture and waveform monitors

For picture monitoring and adjustment, this unit controls output signals to the picture monitor and the waveform monitor connected to the CCU-700/700P.

The signals to be sent to the monitors can be selected on this unit.

Equipped with an IC card slot

Various data including scene files and reference files can be stored on an IC card and reproduced at any time.

Signal transmission via a digital line

Between this master setup unit and the camera control unit, signals are digitally transmitted via a single connection cable (CCA-5), ensuring reliable signal transfer.

Parallel operation with another controller

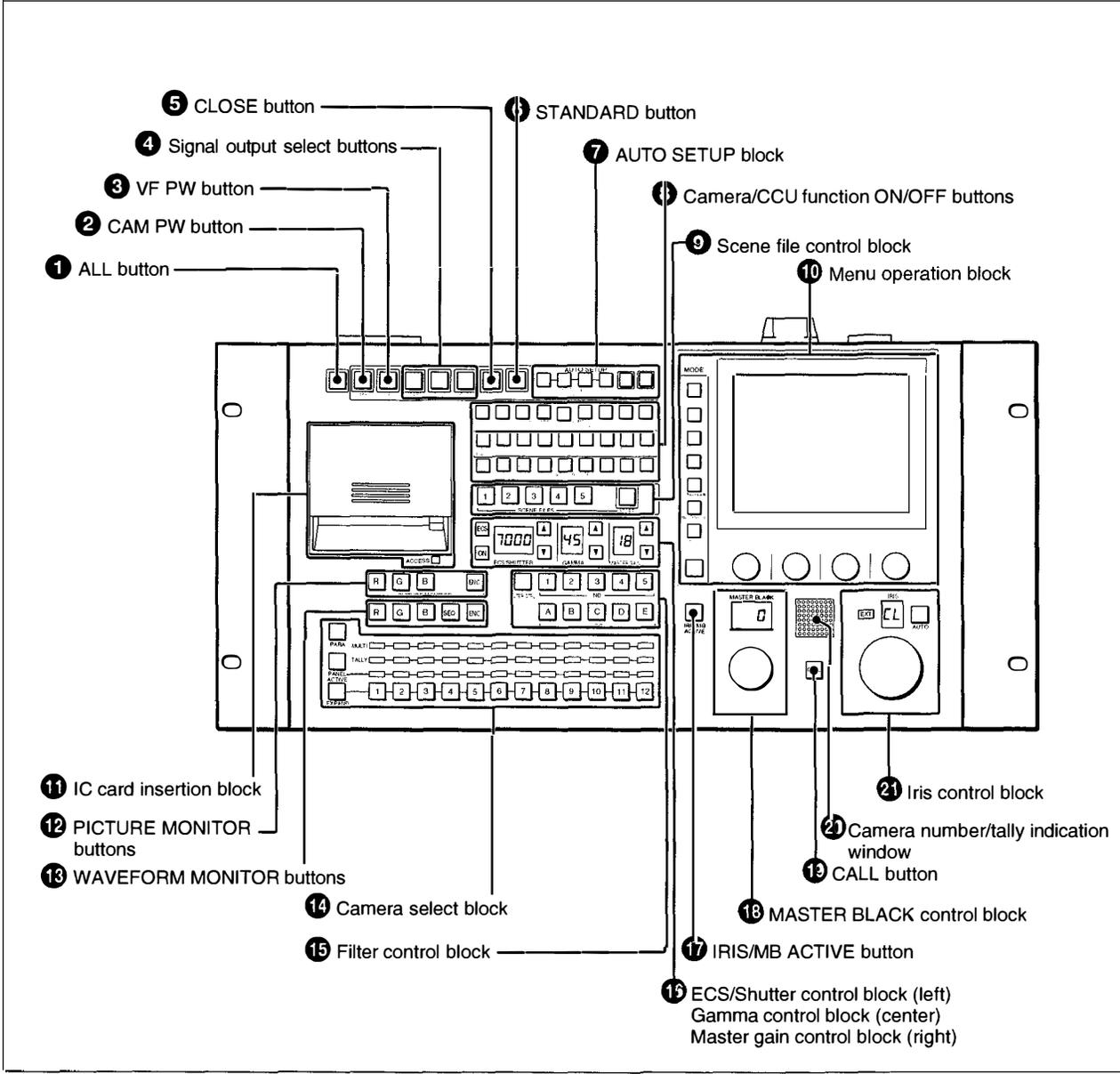
Video cameras can be concurrently controlled from this unit and another controller, such as the RCP-700-series Remote Control Panel.

Mountable in a 19-inch rack

This unit can be mounted in a 19-inch EIA standard rack. The height is five rack units.

Location and Function of Parts and Controls

Operation Panel



Location and Function of Parts and Controls

① ALL button

Press the button so it starts flashing to activate the 13 buttons located at the right (from CAM PW to AUTO SETUP) for all the connected cameras of the same group.

② CAM PW (camera power) button

Press and light up this button to turn the power supply to the video camera ON. (The button promptly flashes until the camera becomes ready for transmission.)

When you press this button again, it starts flashing and the power supply to the camera is turned off.

③ VF PW (viewfinder power) button

Press and light up this button to turn the power supply to the viewfinder ON.

When you press the button again, it goes dark and the power supply is turned off.

④ Signal output select buttons

Press and light up one of these buttons to activate the test signal generator of the video camera and send the respective signals.

TEST 1: To send a gamma signal to test the video circuits

TEST 2: To send a staircase signal

BARS: To send a color bar signal

Note

The BARS button takes priority to the other two buttons.

If the BARS button is lit, press the button to turn it dark before pressing the TEST 1 or TEST 2 button.

⑤ CLOSE (iris close) button

Press and light the button to close the iris. Press again to release the close mode.

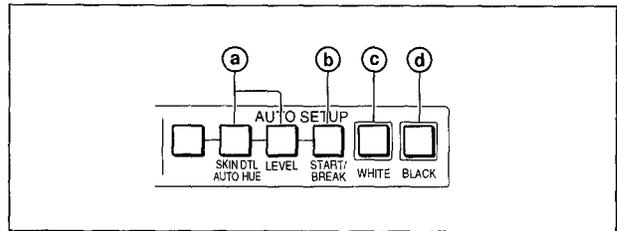
⑥ STANDARD button

When you press this button, the video camera is initialized to its standard state and the button lights for several seconds.

If you press the button while it lights, the video camera returns the state before the button was lit.

For details, refer to the System Manual.

⑦ AUTO SETUP block



① Auto adjustment item select buttons

Press and light up these buttons to select the items to be automatically adjusted.

SKIN DTL AUTO HUE: Skin tone detail automatic hue

LEVEL: Gamma balance, knee point, master black level, etc.

② START/BREAK button

Press to start automatic adjustment of the selected items.

The button lights during adjustment and goes dark when adjustment is completed.

If you press the button when lit, the automatic adjustment is canceled and the button flashes. To stop the flashing, press the button again.

③ WHITE (white balance) button

Press to automatically adjust the white balance. The button lights during adjustment and goes dark when adjustment is completed.

If you press this button when lit or the START/BREAK button, the automatic adjustment is canceled and the button flashes. To stop the flashing, press the button again.

④ BLACK (black balance) button

Press to automatically adjust the black balance and black set.

The button lights during adjustment and goes dark when adjustment is completed.

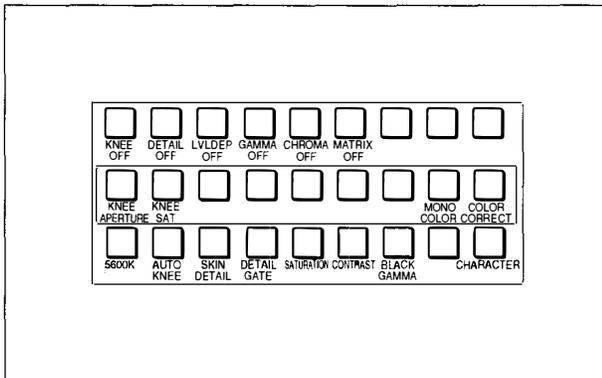
If you press this button when lit or the START/BREAK button, the automatic adjustment is canceled and the button flashes. To stop the flashing, press the button again.

Notes

- If an error occurs during adjustment, the pressed button flashes.
- The leftmost button is for future use and has no function at present.

8 Camera/CCU function ON/OFF buttons

Various functions of the video camera or the CCU-700/700P can be turned on and off from this unit. The following switching functions are assigned to 18 of the buttons at the factory and the other nine buttons are reserved for future use.



• Upper row (OFF when the button is lit)

KNEE OFF: Knee compensation function

DETAIL OFF: Detail compensation function

LVL DEP OFF: Level dependent function which controls the details in the dark part of a picture

GAMMA OFF: Gamma function

CHROMA OFF: Chroma function

MATRIX OFF: Linear matrix function to enhance color fidelity

• Middle row (ON when the button is lit)

KNEE APERTURE: Knee aperture function

KNEE SAT: Knee saturation function

MONO COLOR: Mono color function which mixes the chroma signals of a single hue to the luminance signal. The chroma level is modulated according to the luminance signal.

COLOR CORRECT: Color correction function for a certain hue range.

• Lower row (ON when the button is lit)

5600K: 5600K electric color temperature conversion function

AUTO KNEE: Auto knee function. When this button is lit (ON), the knee point is automatically adjusted according to the light content of the picture.

SKIN DETAIL: Skin tone detail function

DETAIL GATE: Skin tone detail gate function.

When this button is lit (ON), the adjustment range of the skin tone detail is displayed in white on the monitor screen.

SATURATION: Saturation function

CONTRAST: Contrast function

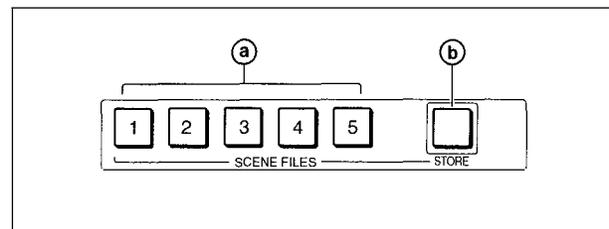
BLACK GAMMA: Black gamma function

CHARACTER: System information display

function. When this button is lit (ON), the various information on the entire system is displayed on the monitor connected to the CHARACTER connector of the CNU-700.

The display contents can be changed through a menu operation.

9 Scene file control block



① SCENE FILES buttons

While the STORE button is flashing: When you press one of these buttons, the current setting data is stored as a file of the corresponding number.

When the STORE button is dark: The stored data can be retrieved by pressing and lighting up the button of the desired number. Press the lit button to turn it dark and resume the previous status.

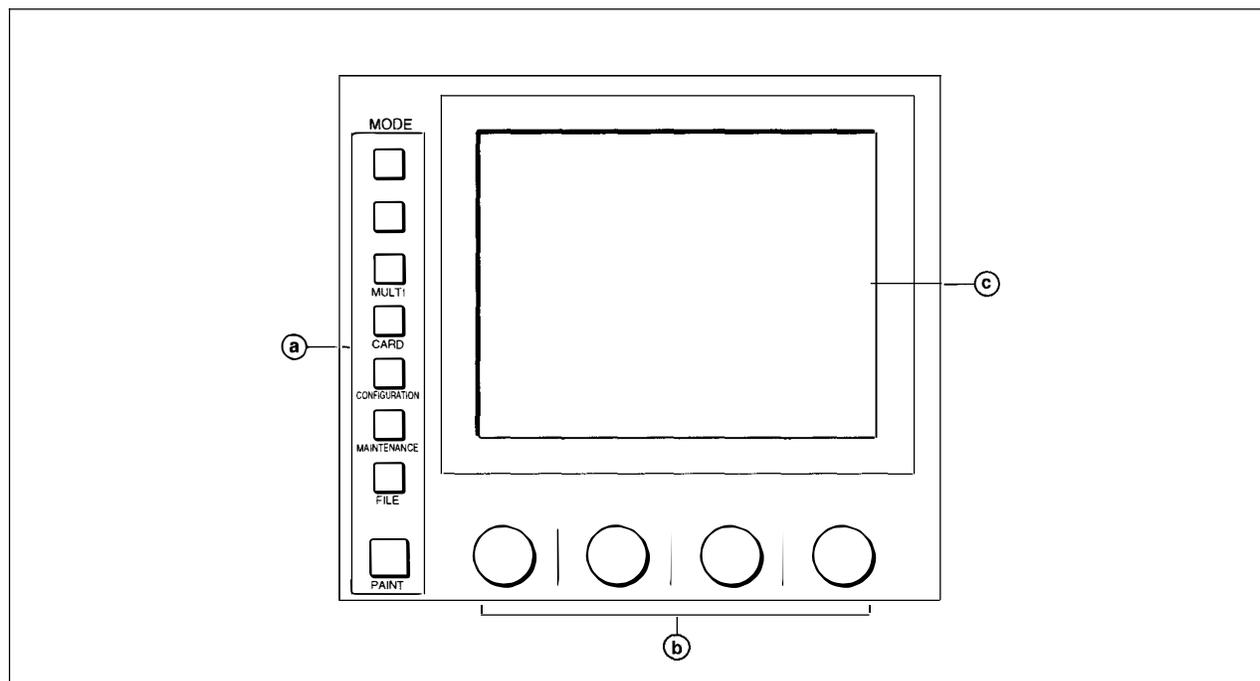
② STORE button

To store a scene file, first press this button so that the button starts flashing, then press the SCENE FILES button of the desired number. When file registration is completed, the STORE button goes dark.

To cancel the registration, press the flashing button again before pressing the SCENE FILES button. The STORE button goes dark.

Location and Function of Parts and Controls

⑩ Menu operation block



③ MODE (mode select) buttons

Select the menu mode.

If you press and light one of these buttons, the menu for the selected mode appears on the EL display.

When the lit button is pressed again, it goes dark and the menu on the display also disappears.

MULTI: Multi setting mode to set the requirements for Master/Slave mode to set up multiple cameras in synchronization.

CARD: IC card operation mode to set the requirements for using IC cards. Card data can also be duplicated in this mode.

CONFIGURATION: Configuration mode to configure this unit and the entire camera system.

MAINTENANCE: Maintenance mode. The H and SC phases of the CCU-700/700P are set in this mode.

FILE: File operation mode. Storing, retrieving and transferring reference files, lens files and scene files in the video camera or on IC cards.

PAINT: Paint control mode. Various paint items, such as white, black and flare, are adjusted in this mode.

④ Control knobs (rotary encoders)

Adjust the selected items on the touch panel.

⑤ EL display/touch panel

Displays the menu selected with the MODE buttons and permits the displayed items to be adjusted.

For display examples, see the next page.

Menu display

Example: When the Paint menu is selected (PAINT button is lit)

To clear the adjusted values (see the adjustment display).

The names of the items (item groups) are displayed. Press the name of the item (item group) to be adjusted. The pressed name area lights in reverse status and the lower half of the panel becomes the adjustment display.

Press to return to the first page of the menu.

Press either to flip the pages of the menu.

Current page number/Total number of pages (1/3 means that the Paint menu consists of 3 pages in all and that the first page of the menu is displayed at present.)

Adjustment display

Example: Gamma/knee adjustment display (when "Gamma/Knee" is selected from the paint menu)

The name of the selected item (item group) is displayed. By pressing this area after pressing "Clear" whereupon it is displayed in reverse status, all the adjustment values for the selected item (item group) are initialized to standard.

When there are any ON/OFF functions related to the adjustment, the names of the functions are displayed on this line. You can turn these functions on/off by pressing their names in the same manner as with the camera/CCU function ON/OFF buttons.

The adjustment parameters (items) for the selected item (item group) and their adjustment values are displayed. By pressing a value area after pressing "Clear" whereupon it is displayed in reverse status, that adjustment value is initialized to standard.

Gamma	Blk Gamma	Knee Point	Knee Slope
-28	6	-21	10

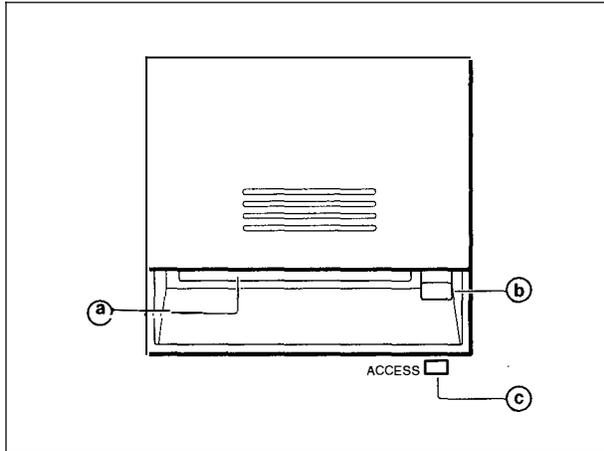
Submenu

Example: Submenu of "Detail" (when "Detail" is selected from the Paint menu)

If the selected item group consists of multiple item groups, a submenu is displayed. Press the desired submenu item (Detail 1, Detail 2 or Detail 3 in this example).

Level	Limiter	Crispning	Level Dep
3	-7	42	99

11 IC card insertion block



Ⓐ IC card slot

Insert an IC card (which conforms to PCMCIA) to store reference files, lens files and scene files of the video camera or the CCU-700/700P. It also permits the configuration of the CNU-700 and software installation for version up.

Ⓑ Eject button

Press to eject the inserted IC card.

Ⓒ ACCESS indicator

This indicator lights in green when an IC card is inserted in the IC card slot correctly. It lights in red during data access. If the built-in battery in the IC card is exhausted, this indicator lights in orange.

For battery replacement, refer to the instructions for the IC card.

12 PICTURE MONITOR buttons

Press to select the output signal from the PIX2 OUTPUT connector of the CCU-700/700P.

The signal corresponding to the lit button is output.

R/G/B: Select the R signal, G signal, or B signal.

The signals can be selected either independently or in combination. When any of these buttons is pressed, the ENC circuit is turned off.

ENC (encode): When this button is pressed, the R/G/B circuits are turned off and the ENC signal is output.

13 WAVEFORM MONITOR buttons

Press to select the output signal from the WF2 OUTPUT connector of the CCU-700/700P.

The signal corresponding to the lit button is output.

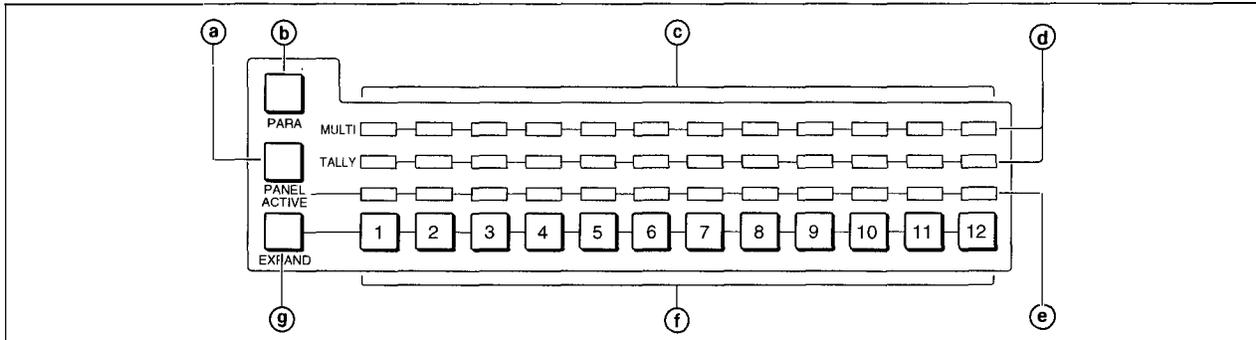
R/G/B: Select the R signal, G signal, or B signal.

The signals can be selected either independently or in combination. When any of these buttons is pressed, the SEQ and ENC circuits are turned off.

SEQ (sequence): When this button is pressed, the R/G/B circuits are turned off and the SEQ signal is output. You can monitor the waveforms of the three R, G, and B signals in sequence on a waveform monitor.

ENC (encode): When this button is pressed, the R/G/B and SEQ circuits are turned off and the ENC signal is output.

14 Camera select block



Ⓐ PANEL ACTIVE button

Press and light up this button to permit the cameras selected with the camera select buttons to be controlled from this unit. The IRIS/MB ACTIVE button also lights up.

If you press the button when lit, it goes dark and the operation panel of this unit is locked.

Ⓑ PARA (parallel mode) button

Press and light up this button to activate Parallel mode, which enables concurrent operation with another control panel.

If you press the button when lit, it goes dark and Parallel mode is canceled.

Ⓒ MULTI indicators

Show the Master/Slave status of the corresponding cameras 1 through 12 (when the EXPAND button is not lit) or 13 through 24 (when the EXPAND button is lit).

The indicator for the camera which is specified as the master for Master/Slave mode lights in green. The indicators for the slave cameras light in orange.

They light in red during the auto setup of the corresponding cameras. If an error occurs during the auto setup and the operation is interrupted, they will flash in red.

Ⓓ TALLY indicators

Show the tally status of the corresponding cameras 1 through 12 (when the EXPAND button is not lit) or 13 through 24 (when the EXPAND button is lit). The corresponding indicator lights in red when a red tally is sent to a camera, and it lights in green when a green tally is sent. When both red and green tally are sent, it lights in orange. When a call signal is sent to the camera, the indicator rapidly flashes in red.

Ⓔ Active indicators

Show the control status of the corresponding cameras 1 through 12 (when the EXPAND button is not lit) or 13 through 24 (when the EXPAND button is lit).

The indicators for the cameras under control of this unit light in green and the indicators for the cameras under control of another control panel light in orange.

An indicator whose corresponding camera (or camera control unit) is not connected does not light.

An indicator lights in red when an error is detected and the self-diagnostic functions are activated in the corresponding camera or camera control unit.

Ⓕ Camera select buttons

Select the cameras to be controlled from this unit. Press and light up the button corresponding to each desired camera.

Cameras 1 through 12 are selected when the EXPAND button is not lit, and cameras 13 through 24 are selected when the EXPAND button is lit.

Ⓖ EXPAND button

Press to select the group to be selected with the camera select buttons.

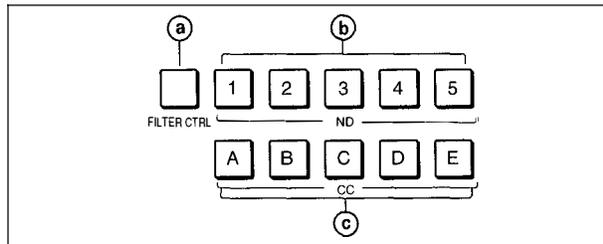
Cameras 1 through 12 can be selected when this button is not lit, and cameras 13 through 24 can be selected when this button is lit.

Note

The CNU-700 Camera Command Network Unit is required to control multiple cameras using the camera select function.

Location and Function of Parts and Controls

15 Filter control block



Ⓐ FILTER CTRL (filter control) button

Press and light up the button to enable filter selection with the CC and ND filter select buttons of this unit.

Ⓑ ND (ND filter select) buttons

While the FILTER CTRL button is lit, press and light up one of these buttons to select the corresponding ND filter.

- 1: Clear
- 2: 1/4 ND
- 3: 1/8 ND
- 4: 1/16 ND
- 5: 1/64 ND

When the FILTER CTRL button is not lit, the button corresponding to the filter selected at the video camera lights.

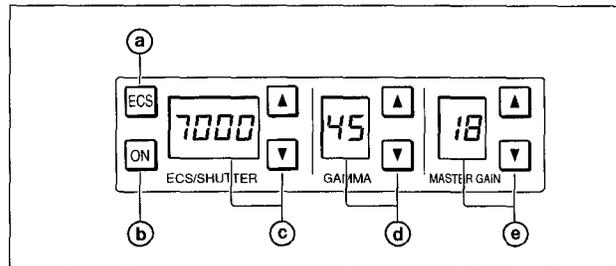
Ⓒ CC (color temperature conversion filter select) buttons

While the FILTER CTRL button is lit, press and light up one of these buttons to select the corresponding CC filter.

- A: Cross filter
- B: 3200K (clear)
- C: 4300K
- D: 6300K
- E: 8000K

When the FILTER CTRL button is not lit, the button corresponding to the filter selected at the video camera lights.

16 ECS/Shutter control block (left) Gamma control block (center) Master gain control block (right)



Ⓐ ECS (Extended Clear Scan) button

Press and light up the button to set the video camera to ECS mode. Press again and turn off the button to set the video camera to Shutter mode.

Ⓑ ON button

Turns on and off the ECS function (when the ECS button is lit) or the shutter function (when the ECS button is not lit).

The function is ON when this button is lit.

Ⓒ ECS frequency/Shutter speed select buttons and display window

In ECS mode (when the ECS button is lit): The selected ECS frequency is displayed in the window. Press to select the desired scan frequency.

The frequency increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is kept pressed.

In Shutter mode (when the ECS button is not lit): The denominator of the selected step shutter speed is displayed in the window. Press to select the desired shutter speed.

The speed increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is kept pressed.

④ GAMMA select buttons and display window

Select the step gamma. The selected value is displayed in the window.

The gamma value decreases when the ▲ (up) button is pressed and increases when the ▼ (down) button is pressed. It continuously changes when either button is kept pressed.

Note

The higher the gamma effect, the lower the value.

⑤ MASTER GAIN select buttons and display window

Select the appropriate video gain according to the illumination of the subject to be shot. The selected value (dB) is displayed in the window.

The gain value increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is kept pressed.

⑦ IRIS/MB ACTIVE (iris/master black active) button

Press and light up this button to enable the iris and master black adjustment functions of the this unit. When the PANEL ACTIVE button is pressed, this button automatically lights. To disable only the iris/master black control block of the panel, press this button so that it goes dark.

⑧ MASTER BLACK control block

Turn the control to adjust the master black level. The adjustment value is displayed in the display window.

⑨ CALL button

Press to send a call signal to the video camera, on which the CALL button lights. The tally lamps on the camera and the red tally lamp on the CCU-700/700P light when not lit, or go dark when lit.

When the CALL button on the video camera is pressed, the CALL button on this unit lights and a buzzer sounds.

⑩ Camera number/tally indication window

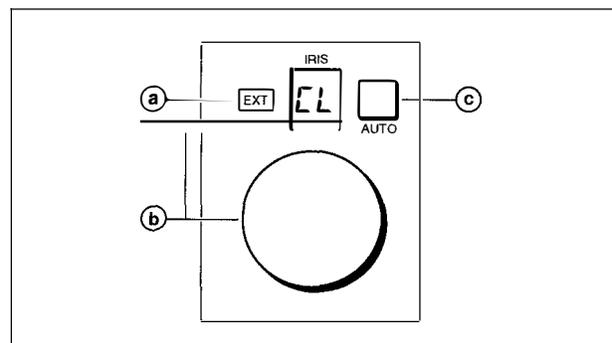
The number of the camera being controlled from this unit is displayed in orange.

When a red tally signal is sent to the camera, the number is displayed in black and the background of the number lights in red.

When a green tally signal is sent to the camera, the number is displayed in black and the background of the number lights in green.

When both the red and green tally signals are simultaneously sent, the left half of the background lights in red and the right half lights in green.

⑪ Iris control block



⑫ EXT (lens extender) indicator

Lights when the lens extender is used.

⑬ IRIS control and display window

When the AUTO button is not lit, you can adjust the iris manually by turning the control. The adjustment value is displayed in f numbers on the display.

When the AUTO button is lit, the reference value for automatic iris adjustment can be set in a range of $\pm 1f$ with this control.

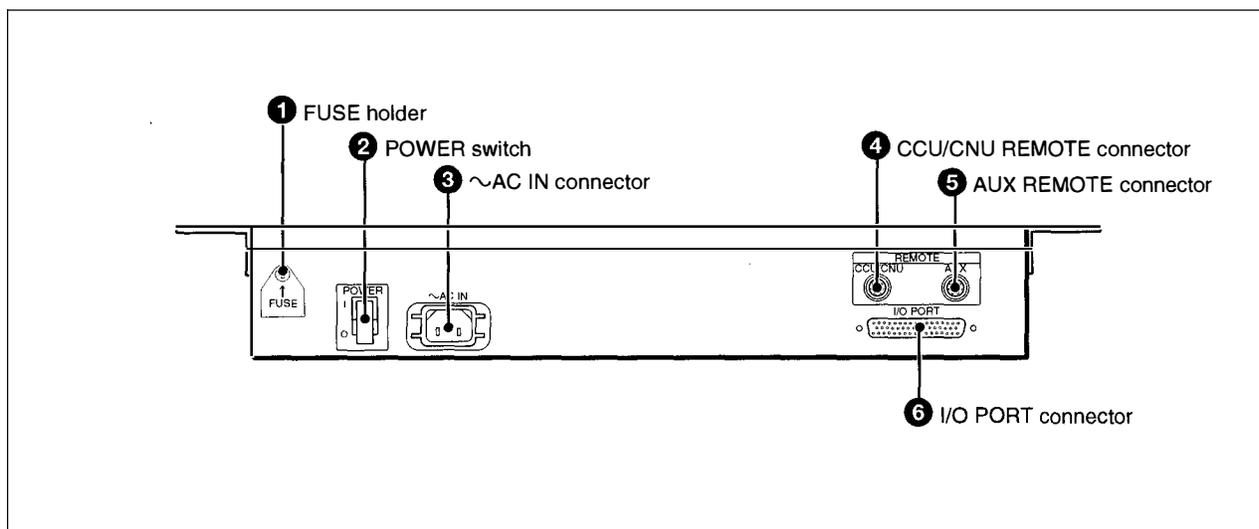
When the iris is closed, "CL" is displayed in the window.

⑭ AUTO button

Press and light the button to automatically adjust the iris according to the amount of input light.

If you press the button when lit, it goes dark and manual iris adjustment is enabled.

Connector Panel



❶ FUSE holder

Accommodates a fuse.

❷ POWER switch

Turns on and off the power of this unit.

❸ ~AC IN (AC power input) connector

Connect to an AC power source using the supplied AC power cord. The power cord can be fixed to this unit using the supplied plug holder.

❹ CCU/CNU REMOTE (camera control unit/ camera command network unit remote) connector (8-pin)

Connect to the RCP/CNU connector of the CCU-700/700P or the MSU connector of the CNU-700.

❺ AUX REMOTE (auxiliary remote) connector (8-pin)

❻ I/O PORT connector (50-pin)

Reserved for future use.

Specifications

General

Power requirements	Model for the USA and Canada: 100 to 120 V AC, 50/60 Hz Model for other countries: 110 to 240 V AC, 50/60 Hz
Current consumption	Model for the USA and Canada: 0.45 A Model for other countries: 0.45 A max.
Maximum cable length	200 m (656 feet)
Operating temperature	0°C to 45°C (32°F to 113°F)
Dimensions (w/h/d)	482 × 222 × 67 mm (19 × 8 ³ / ₄ × 2 ³ / ₄ inches) including projecting parts and controls
Mass	Approx. 4.5 kg (9 lb 15 oz)

Inputs/outputs

REMOTE	
CCU/CNU	8-pin multiconnector (1)
AUX	8-pin multiconnector (1)
I/O PORT	50-pin (1)
~AC IN	3-pin (1)

Supplied accessories

AC power cord (1)
Plug holder for the AC power cord (1)
Spare fuse (1)
Operation Manual (1)
Maintenance Manual (1)

Design and specifications are subject to change without notice.

