SONY®

REMOTE CONTROL PANEL

RCP-1000
RCP-1001

OPERATION MANUAL   English
1st Edition (Revised 3)

Table of Contents

Precautions

Note on interference

Do not place mobile phones or similar devices on the control panel. Doing so may result in malfunction of the unit.

Overview

Features

The MSU-1000 series and RCP-1000 series are remote control panels for configuring and controlling Sony's studio and broadcast cameras.

This section describes the features that are common between the MSU-1000 series and RCP-1000 series.

Remote control panels

The RCP-1000 series of remote control panels is designed mainly for operation. Use a remote control panel with a camera on a one-to-one basis.

- The RCP-1000 is a compact control panel with specialized basic operations. The iris and master black adjustment block employs joystick type control. Up to six units can be mounted in a 19-inch EIA rack.
- The RCP-1001 is a compact control panel with specialized basic operations. The iris and master black adjustment block employs dial (knob) type control. Up to six units can be mounted in a 19-inch EIA rack.

Operability suitable for basic camera operations

This remote control panel is provided with the control functions required to perform the basic operations of cameras to enable the simple and accurate operation of various functions. The operation buttons, adjustment knobs, and other controls are arranged on the panel according to function and frequency of use. Guard frames are provided around buttons that are vital to the operation and setup of cameras to prevent the buttons from being unintentionally operated.

Illuminated buttons with high visibility flash and light to notify you of the operation status to enable operation even in dark locations. Likewise, an illuminated panel surface is employed to allow you to confirm function names even when the surroundings are dark.

Building of a variety of control systems

You can build a multi-camera control system through use of the CNU-700. In a system that uses CNU-700s, two CNUs can be used to control a camera system of up to 24 cameras. A system that uses a LAN can also be built by connecting to a LAN-compatible CCU.

Support for operating multiple cameras

Various operations are made possible by using multiple camera systems that support multiple cameras. The following functions are provided to control the connected cameras.

- Panel active function
  This function always enables one control panel for one camera to prevent unintentional operation. Even with a control panel that does not have the panel active permission, a camera can be operated using the parallel function, with the exception of iris and master black operations.
- ALL function
  This function simultaneously turns on and off the functions of all connected camera systems.[1]
- RCP assignment function
  This function changes the combination of an RCP and camera system.[1]
- Master/subordinate function
  This function makes changes in conjunction with the color temperature of the specified camera system.[1] [2] [3]

Customizable functions

Various settings can be configured according to the operation configuration and the frequency with which functions are used.

- **Switches**
  You can assign any function to a spare switch.
- **Operation and call sounds**
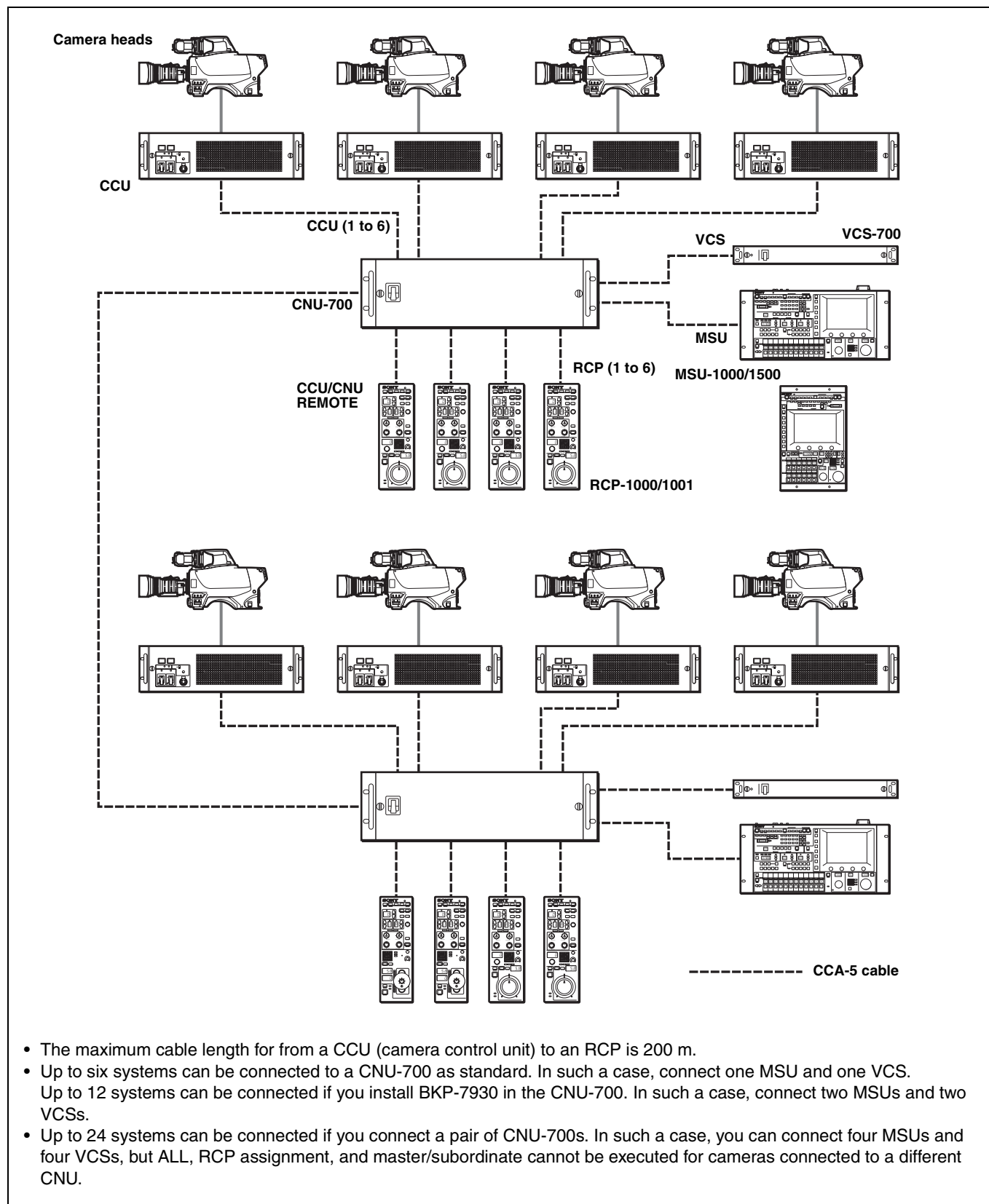 You can mute and adjust the volume of the operation and call sounds if necessary.

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1) If multiple CNUs exist in the system, this only works for cameras connected to the same CNU.
2) This does not work when connected to a network.
3) This unit does not include a master/subordinate switching mechanism. Switching between master and subordinate mode must be performed from another control panel.
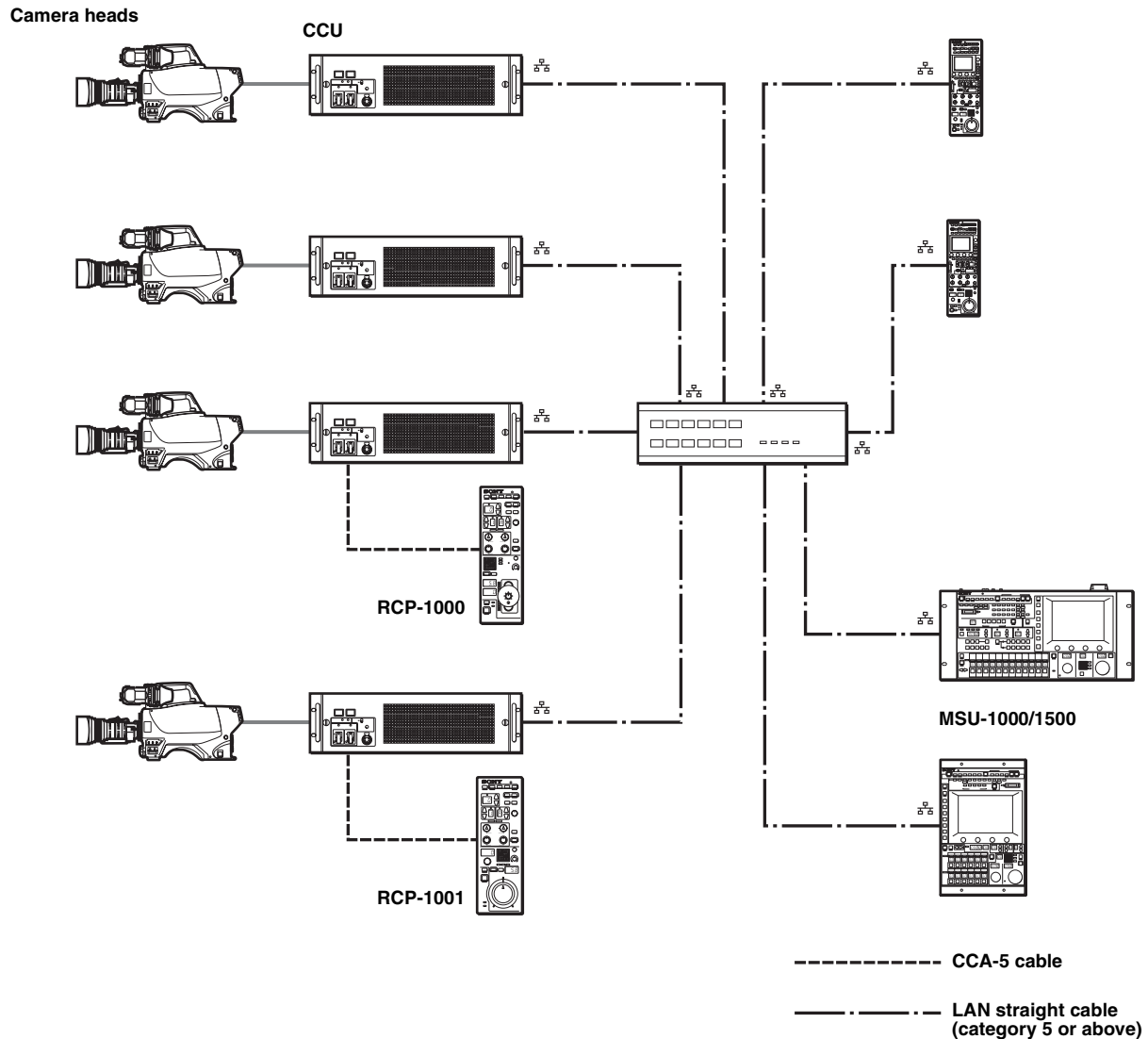
Examples of System Configurations

Connection example for LEGACY mode

Camera heads

CCU

CCU (1 to 6)

VCS

VCS-700

CNU-700

MSU

CCU/CNU REMOTE

RCP (1 to 6)

MSU-1000/1500

RCP-1000/1001

CCA-5 cable

- The maximum cable length for from a CCU (camera control unit) to an RCP is 200 m.
- Up to six systems can be connected to a CNU-700 as standard. In such a case, connect one MSU and one VCS.
  Up to 12 systems can be connected if you install BKP-7930 in the CNU-700. In such a case, connect two MSUs and two VCSs.
- Up to 24 systems can be connected if you connect a pair of CNU-700s. In such a case, you can connect four MSUs and four VCSs, but ALL, RCP assignment, and master/subordinate cannot be executed for cameras connected to a different CNU.

Connection example for MCS mode

Camera heads

CCU

RCP-1000

RCP-1001

MSU-1000/1500

- - - - - - - - - - **CCA-5 cable**

—— · —— · —— **LAN straight cable (category 5 or above)**

- In MCS mode, be sure to set one of the multiple MSUs as the master. Not to turn off the power or disconnect the cable of the master MSU during operation.
- The maximum number of devices that can be directly connected to the network is 96 excluding the master MSU. This maximum number does not include any RCP connected by CCA cable to a CCU connected to the network or any CCU connected by CCA cable to a RCP connected to the network. A client MSU is counted as one unit.
- A CNU and VCS cannot be connected to a system that will be used in MCS mode.

Supported devices

This unit supports connection to the following devices.
- BVP-E30 series
- CCU-590/790 series
- HDC-1000(R)/1500(R)/3300(R) series
- HDCU-1000/1500/3300(R) series
- HSC-300/HSCU-300 series
- HXC-100/HXCU-100 series
- HDC-P1
- F23/F35
- SRW-9000
- PDW-700/740/F800
- HSC300RF/300R/100RF/100R
- HSCU300RF/300R
- CA4000
- BPU8000/4000

Notes

- Proper functioning may not be possible depending on the firmware version. Be sure to update to the latest version before use.
- The functions that are available on the control panel may be limited depending on the connected camera. Some controls may not function with certain cameras, but this is not a malfunction.

Operating Cameras

Camera control permissions (panel active, IRIS/MB active, and PARA)

By combining an MSU and RCP, you can operate one camera device from multiple control panels, and multiple cameras from one MSU. This is called a "multi-camera system." A multi-camera system can be implemented by introducing a CNU or by establishing a LAN connection in MCS mode.
To prevent unintentional operation in a multi-camera system, permission is granted to operate the cameras for only either the connected MSU or RCP. There are three types of permission.
- Panel active
  Even if multiple control panels are connected to one camera, only one control panel has the control permission. This panel is referred to as "active."
  An inactive control panel can only be used to display the status.
- PARA (parallel control)
  By enabling the PARA function on an inactive control panel, you can control cameras. The PARA function is enabled from an inactive control panel, but can be disabled from any control panel.
- IRIS/MB active
  To prevent unintentional operation of IRIS and master black, you can choose the control panels on which to activate IRIS/MB. The PARA function does not operate.
  Operating an inactive control panel on which PARA is disabled will not change the state of the camera.

White balance link (master/subordinate mode)

The color temperature of light shining on the subject varies moment by moment when you shoot outdoors. When correcting for this, you can link the cameras within the system and then control them. When you do this, set the camera that is to be controlled directly to "Master," and the cameras that are to be linked to "Subordinate."
When you change the white balance of the control panel to which the master camera is connected, the subordinate cameras are corrected by the same correction amount. However, adjusting a subordinate camera does not affect any of the other cameras.
The white balance link function is only enabled when there is a connection to a CNU (LEGACY mode).

Note

The functions that are available on the control panel may be limited depending on the connected camera. Some controls may not function with certain cameras, but this is not a malfunction.

Names and Functions of Parts

Operation Panel

RCP-1000

Camera/panel control block
(page 8)

Function control block
(page 9)

Adjustment block (page 10)

Panel control/status display
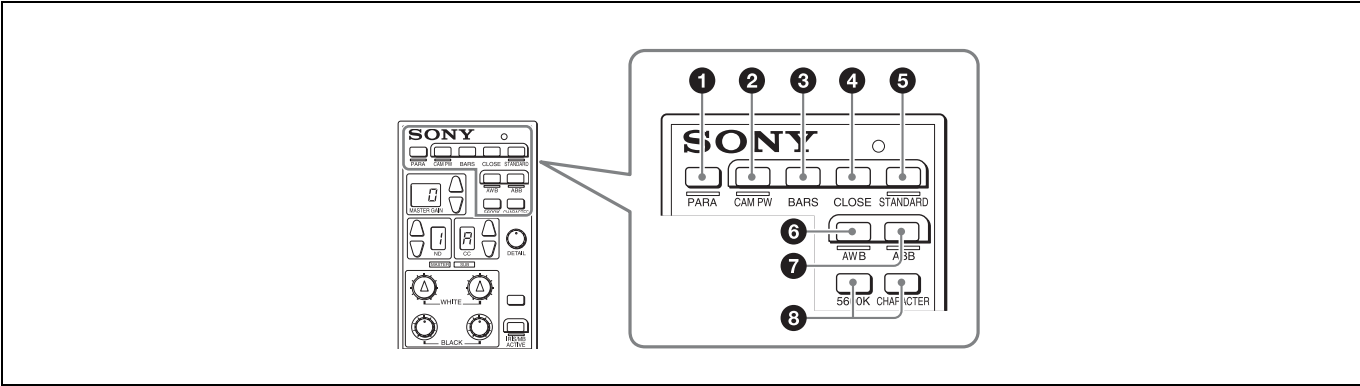block (page 12)

RCP-1001

Camera/panel control block
(page 8)

Function control block
(page 9)

Adjustment block (page 10)

Panel control/status display
block (page 12)

Camera/panel control block

❶ PARA (parallel control) button
This is the PARA function button. It allows you to simultaneously control the control panels that are active. However, IRIS and master black are only enabled on control panels on which IRIS/MB is active, and cannot be controlled simultaneously.

❷ CAM PW (camera power) button
This button is for supplying power from the CCU to the camera heads.

Lighting state	Meaning
On	The power is being supplied.
Off	The power is disconnected. It is not supplied even if the button is pressed.
Slow flashing	The power is disconnected. It is supplied when the button is pressed.
Fast flashing	The camera is starting up.

❸ BARS (color bars signal output) button
This button lights when pressed and is for operating the color bar signal generator of the camera to output the corresponding signal.

Note

When the BARS button is lit, the function of the BARS button takes priority for CCU output. When you select TEST, press the BARS button to turn its light off.

❹ CLOSE (iris close) button
This button is for closing the iris of the lens connected to the camera. Pressing it when the auto iris is on changes the iris indication to CLS. Pressing it when the auto iris is off displays the iris value, and the state of that iris value is restored when the close mode is cancelled.

❺ STANDARD button
This button is for accessing the standard state of the camera. After the standard state is accessed, you can cancel access by pressing this button again while it is lit.

❻ AWB (auto white balance) button
This button is for starting auto white balance adjustment. The button is lit while this function is running and goes out when adjustment is finished. Pressing it again or pressing the START/BREAK button while this function is running stops automatic adjustment. The button flashes to indicate that this function is stopped, and pressing the button again stops the flashing indication.

❼ ABB (auto black balance) button
This button is for starting auto black balance adjustment. The button is lit while this function is running and goes out when adjustment is finished. Pressing it again or pressing the START/BREAK button while this function is running stops automatic adjustment. The button flashes to indicate that this function is stopped, and pressing the button again stops the flashing indication.

❽ Camera/CCU function ON/OFF buttons
These buttons are for various functions. A function is enabled when its button is lit. A function with an OFF indication is off when the button is lit.

Button	Description
5600K	Electric color temperature correction function
CHARACTER	CNU character button Turns ON/OFF character output of the CNU and switches to the next page. When this function is ON, each press of the button switches to the next page (holding the button switches to the last page and stops the function in the OFF state). For details on for what kind of image output characters are displayed, refer to the operation manual of the device of the connection destination.

Function control block
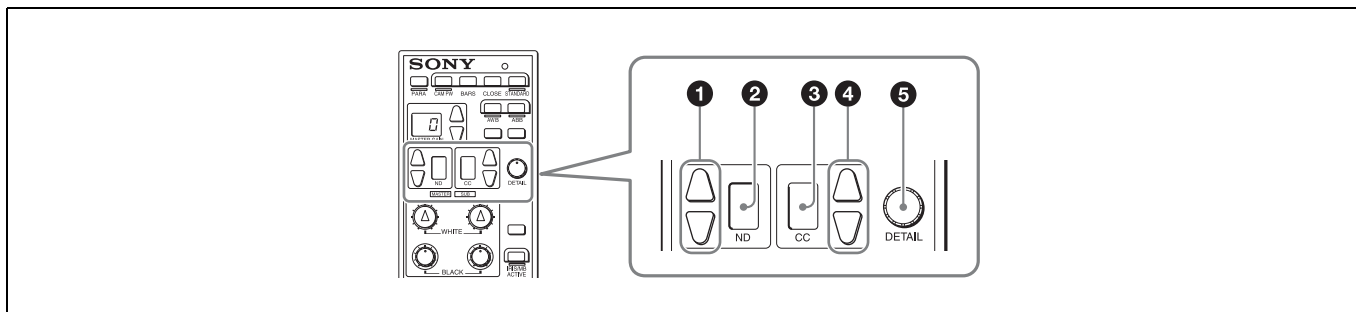
❶ ND filter selection buttons

These buttons are lit when the RCP has the filter servo control permission. When they are not lit, the camera side has the control permission. Pressing either the top or bottom button once switches the control permission to the RCP. If there is no filter servo or the camera does not have a filter, these buttons do not light and the control permission can also not be switched.

The ▲ button changes the ND filters in order in the forward direction. The ▼ button changes them in the opposite direction. Pressing and holding one of the buttons changes the ND filters continuously.

❷ ND filter display window

This window displays the ND filter that is currently selected.

❸ CC (color temperature conversion) filter display window

This window displays the CC filter that is currently selected.

❹ CC (color temperature conversion) filter selection buttons

These buttons are lit when the RCP has the filter servo control permission. When they are not lit, the camera side has the control permission. Pressing either the top or bottom button once switches the control permission to the RCP. If there is no filter servo or the camera does not have a filter, these buttons do not light and the control permission can also not be switched.
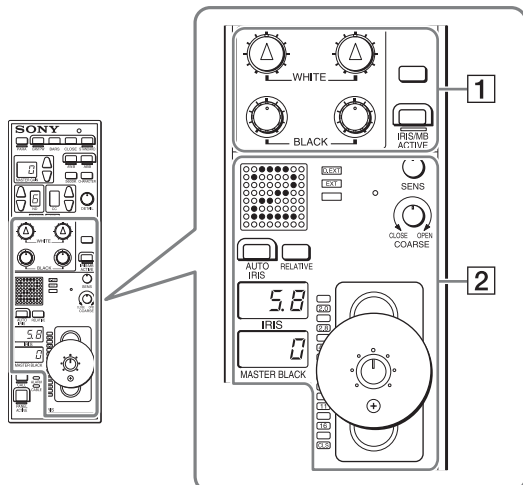
The ▲ button changes the CC filters in order in the forward direction. The ▼ button changes them in the opposite direction. Pressing and holding one of the buttons changes the ND filters continuously.
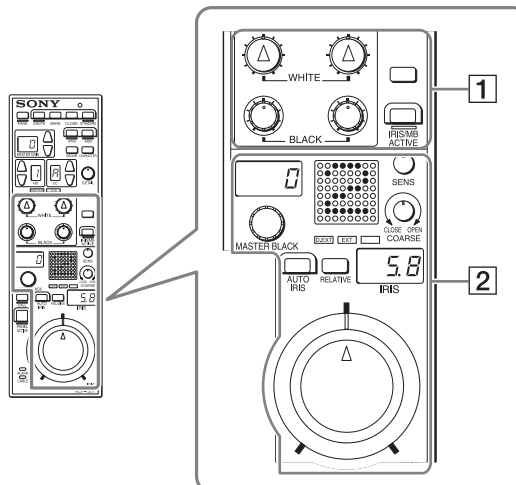
❺ DETAIL knob
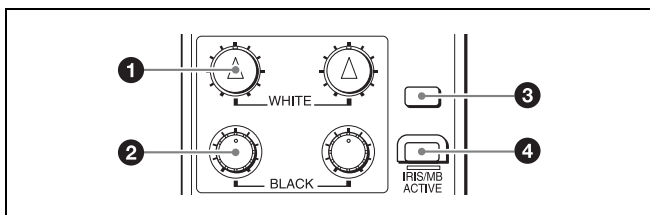
This knob adjusts the detail level.

Adjustment block

RCP-1000

RCP-1001

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1 **White balance/black balance adjustment block**

❶ **WHITE (manual white balance) knobs**
These knobs allow you to adjust the R and B signals in order from left to right.

❷ **BLACK (manual black balance) knobs**
These knobs adjust the black balance. They adjust the R and B signals in order from left to right.

❸ **Assignable button**
This button allows any functions to be assigned to them.

For details on assigning functions to assignable buttons, see page 15.

❹ **IRIS/MB ACTIVE (iris/master black active) button**
This button is for the iris and master black control permission. The iris and master black can only be adjusted when this button is lit. Pressing the PANEL ACTIVE button also causes this button to light.

2 **Iris/master control black adjustment block**

RCP-1000

RCP-1001
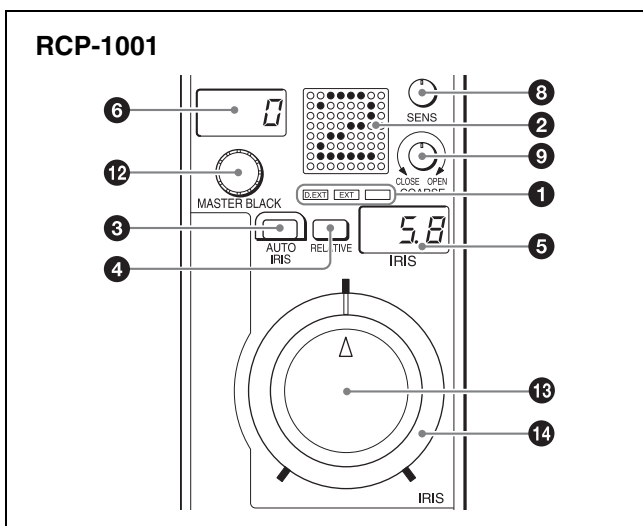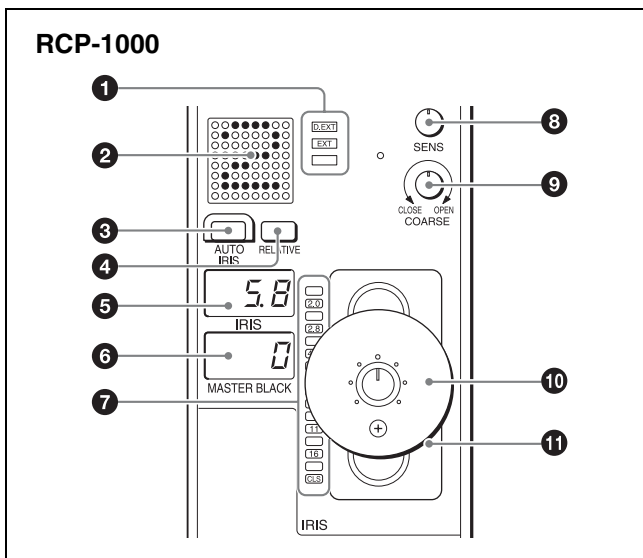
❶ **EXT (lens extender) indicators**
EXT: Lights when the lens extender is used.
D EXT: Lights when the digital extender function is turned ON.

❷ **Camera number/tally display window**
This window displays an amber number for the camera controlled by the control panel.
When a red tally signal is sent to the camera, a black number is displayed and the background of the number lights in red.
When a green tally signal is sent to the camera, a black number is displayed and the background of the number lights in green.
When both red and green tally signals are simultaneously sent, the left half of the background lights in red, and the right half lights in green.

❸ **AUTO IRIS button**
This button is for adjusting the iris automatically.

❹ **RELATIVE button**
This button changes the manual adjustment mode of the IRIS knob. Relative value mode is enabled when the button is lit, and absolute value mode is enabled when the button is not lit.

❺ **IRIS display window**
This window displays the iris setting as an F number. If the lens is closed, "CLS" is displayed.

❻ **Master black display window**
This window displays the master black setting value.

❼ **Iris indicators**
The corresponding LED lights according to the iris setting. When the IRIS RELATIVE button is not lit, the indicators light dimly to display the upper and lower limits of manual adjustment.

❽ **SENS (iris adjustment range) knob**
This knob is for manually adjusting the iris in absolute value mode. It does not work in relative value mode.

❾ **COARSE (iris coarse adjustment) knob**
This knob is for manually adjusting the iris.
Also see the table "Iris Adjustment Functions", (page 11).

❿ **IRIS control lever**
This lever is for manually adjusting the iris of the lens when the AUTO IRIS button is not lit. When the AUTO IRIS button is lit, you can finely adjust the reference value for auto adjustment of the iris.
Also see the table "Iris Adjustment Functions", (page 11).

⓫ **Master black control ring**
This ring is for manually adjusting the master black. The setting value is displayed in the master black display window.

⓬ **MASTER BLACK knob (RCP-1001 only)**
This knob is for manually adjusting the master black. The setting value is displayed in the master black display window.

⓭ **IRIS knob**
This knob is for manually adjusting the iris of the lens when the AUTO button is not lit. When the AUTO IRIS button is lit, you can finely adjust the reference value for auto adjustment of the iris.
Press the switch axially to output preview key signals from the EXT I/O connector.
Also see the table "Iris Adjustment Functions", (page 11).

⓮ **Iris gauge**
The white marker line on the gauge provides a click position for the IRIS knob. If you turn the gauge to align the marker line with the most frequently used iris position, it can be used as a setting reference for the IRIS knob.
The gauge rotates 360, so set the marker line so that it is outside the rotation range of the knob if you do not need a click position.

Iris Adjustment Functions

	Relative value mode (IRIS RELATIVE button lit)	Absolute value mode (IRIS RELATIVE button not lit)
IRIS knob	Adjusts the iris in relative values.	Adjusts the iris within the variable range set by the SENS and COARSE knobs.
COARSE knob	Adjusts the iris in relative values within the full range from OPEN to CLOSE.	Sets the lower limit for the CLOSE side.
SENS knob	Does not function.	Sets the upper limit for OPEN, referenced to the CLOSE value set by the COARSE knob.

Panel control/status display block

RCP-1000

RCP-1001
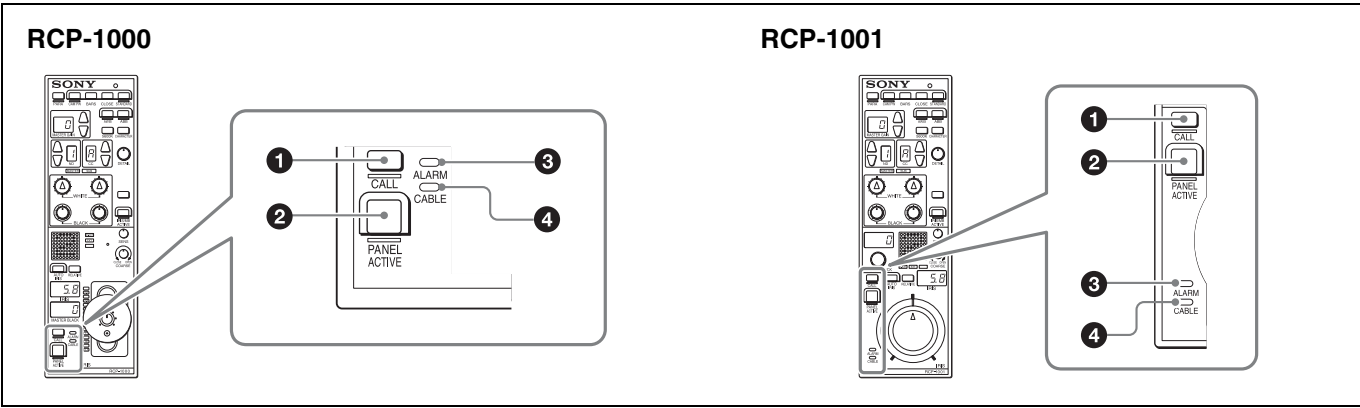
❶ CALL button
This button is for communication. If it is pressed, the tally state for the camera or CCU changes, and a call signal is sent. Likewise, a call signal can be received from another device. When a call signal is sent (or received), this button lights and the call sound plays. The call sound can be selected in the menu.

For details on setting the call sound, see " Setting the Call Sound" on page 14.

❷ PANEL ACTIVE button
This button is for the control permission. It also serves as a function for preventing unintentional operation because a camera cannot be controlled from this control panel when this button and the PARA button are not lit.

❸ ALARM indicator
This lights red when a system error occurs and the self-diagnosis function is operating on the camera head or CCU/HDCU.

❹ CABLE indicator
This indicates the communication state of the camera head and CCU.

During fiber cable connections

Indicates the communication state of the camera head and CCU based on the optical receiver levels on the CHU (camera) side and the CCU side. If there is a difference between the optical receiver levels of both sides, the communication state of the side with the lower level is indicated.

Lighting state	Meaning
On (green)	The reception state is good.
On (yellow)	The reception level is low.
On (red)	The reception level is extremely low.
Off	The power of the camera or CCU is off. Alternatively, a connected device is not recognized.

During triaxial cable connections

Lighting state	Meaning
On (green)	The reception state is good.
On (red)	The reception level is extremely low.
Off	Other

Connector Panel
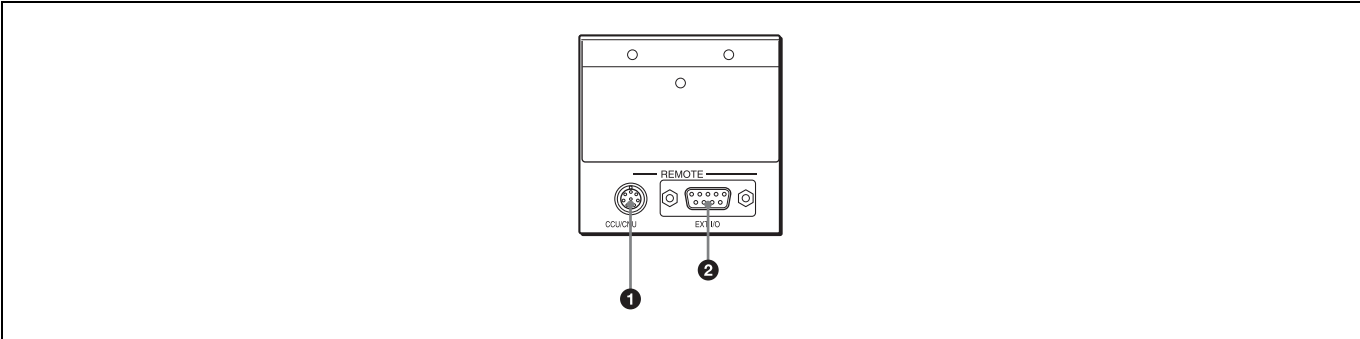
❶ CCU/CNU REMOTE (CCU/CNU remote) connector (8-pin multi-connector, female)
This is for connecting to the RCP/CNU connector of the CCU or the RCP connector of the CNU.

❷ EXT I/O connector (D-sub 9-pin, female)
This is used for external interface connections.

Settings

Setting the Control Panel

The selectors shown in the left side of the diagram below is used to set the control panel.
Setting item selector: This selects setting modes.
Assignable button selector: This selects functions to be assigned to assignable buttons.
It is necessary to use a small flat-blade screwdriver to turn both selectors.
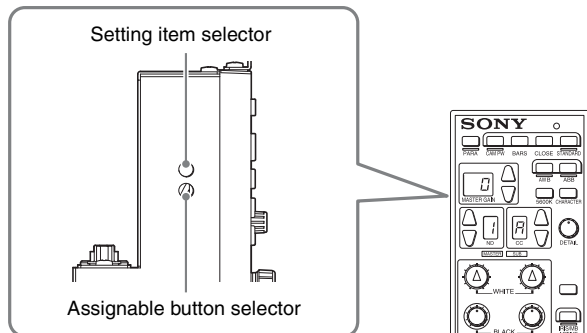
Adjusting the Brightness of the LED

You can adjust operation buttons and LED brightness.

1 **Turn the setting item selector in the control panel until "1" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for adjusting LED brightness.

2 **Turn the DETAIL knob and adjust the brightness of the lit LED.**
The adjustment value appears in the IRIS display window.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.
When the STANDARD button is pressed, the setting value will reset to its default setting.

3 **Press the CAM PW button to save the setting.**

4 **Turn the setting item selector and reset the setting number to "0".**

Setting Display Characters to Light-up in Dark Locations

Using the EL backlight, a slight light can be emitted from the characters on the panel. This setting makes the characters easy to see in dark surroundings.

1 **Turn the setting item selector in the control panel until "2" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for setting display character backlight.

2 **Press the CC filter selection button and set the backlight for the character display.**
The backlight setting value appears in the CC filter display window. Set the value to "0" to turn off the backlight. The duration of the EL backlight appears in the master black display window.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.
When the STANDARD button is pressed, the setting value will reset to its default setting.

3 **Press the CAM PW button to save the setting.**

4 **Turn the setting item selector and reset the setting number to "0".**

To set the brightness of display characters when they are unlit

The EL backlight automatically turns ON/OFF according to the brightness of the surroundings. You can set the illuminance level when the EL backlight is set to OFF.

1 **Turn the setting item selector in the control panel until "3" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for setting illuminance level when EL backlight is set to OFF.

2 **Turn the DETAIL knob and set the illuminance level when EL backlight is set to OFF.**
The illuminance level value appears in the IRIS display window.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.
When the STANDARD button is pressed, the setting value will reset to its default setting.

3 **Press the CAM PW button to save the setting.**

4 **Turn the setting item selector and reset the setting number to "0".**

Adjusting the Click Sound Level of the Buttons

You can adjust the volume of click sound emitted when pressing the panel buttons.

1 **Turn the setting item selector in the control panel until "4" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for setting button click volume.

2 **Turn the DETAIL knob and adjust the button click volume.**
The click volume adjustment value appears in the IRIS display window.
By pressing the 5600K button, the set volume can be confirmed.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.
When the STANDARD button is pressed, the setting value will reset to its default setting.

3 **Press the CAM PW button to save the setting.**

4 **Turn the setting item selector and reset the setting number to "0".**

Setting the Call Sound

You can adjust the volume or type of call sound.

1 **Turn the setting item selector in the control panel until "5" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for setting call sound.

2 **Turn the DETAIL knob and adjust the call sound volume.**
The adjustment value appears in the IRIS display window.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.
When the STANDARD button is pressed, the setting value will reset to its default setting.

3 **Press the CC filter selection button and change the call sound type.**
The call sound number appears in the CC filter display window.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.
When the STANDARD button is pressed, the setting value will reset to its default setting.

4 **Press the CAM PW button to save the setting.**

5 **Turn the setting item selector and reset the setting number to "0".**

Setting Functions to Assign to the DETAIL Knob

You can assign either HD Detail or SD Detail to the DETAIL knob on the control panel.

1 **Turn the setting item selector in the control panel until "6" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for setting functions to assign to the DETAIL knob.

2 **Press the CC filter selection button and set the function to assign to the DETAIL knob.**
Characters that show functions assigned to the DETAIL knob appear in the CC filter display window. Set to "H" for HD Detail or "S" for SD Detail.
When the CLOSE button is pressed, it will reset to the value set when switched to the setting mode.

3 **Press the CAM PW button to save the setting.**

4 **Turn the setting item selector and reset the setting number to "0".**

Initializing Settings

All control panel settings can be reset to their default condition.

1 **Turn the setting item selector in the control panel until "15" appears in the master gain display window.**
The PANEL ACTIVE button will flash and the setting mode will switch to the mode for resetting the control panel to its default condition.

2 **Press the CAM PW button.**
All of the control panel settings will reset to their default condition.

3 **Turn the setting item selector and reset the setting number to "0".**

Assigning Functions to the Assignable Button

You can assign functions to the assignable button on the control panel.

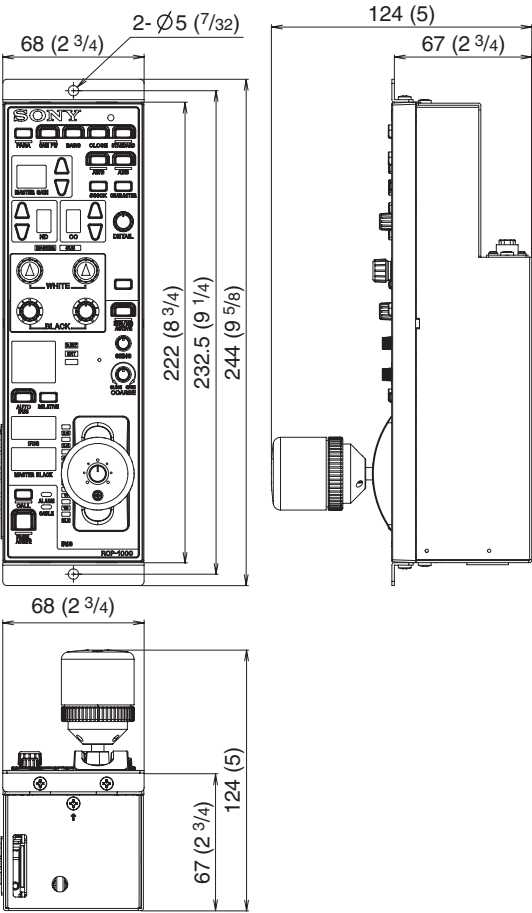**1 Turn the assignable button selector and set the number of the function to assign to the assignable button.**

Setting Number	Assignable Function
0	NO ASSIGN
1	AUTO KNEE
2	SKIN DETAIL
3	GATE
4	BLACK GAMMA
5	KNEE APERTURE
6	KNEE SAT
7	SATURATION
8	ATW
9	D-EXT
A	PREVIEW

2 Turn the control panel power back on.

Specifications

General	
Power supply	10.5 V to 30 V DC
Power consumption	2 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Weight	1.1 kg (2 lb. 9 oz.)

External dimensions	Unit: mm (inches)

RCP-1000

RCP-1001

68 (2 3/4)

2- ⌀5 (7/32)

85 (3 3/8)

67 (2 3/4)

222 (8 3/4)

232.5 (9 1/4)

244 (9 5/8)

68 (2 3/4)

67 (2 3/4)

85 (3 3/8)
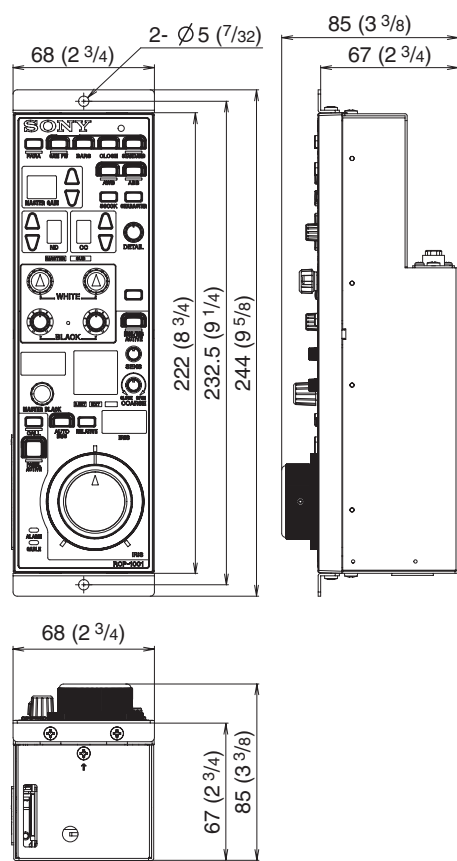
Inputs/outputs

REMOTE
CCU/CNU	8-pin multi-connector, female (1)
EXT I/O	9-pin, female (1)

Supplied accessories

Operation guide (1)
Operation manual (CD-ROM) (1)

Optional accessories

External I/O connector JAE DE-9PF-N 1-568-182-11
CCA-5-3 remote cable (3 m)
CCA-5-10 remote cable (10 m)
CCA-5-30 remote cable (30 m)

Design and specifications are subject to change without notice.

Note

Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.

Sony Corporation