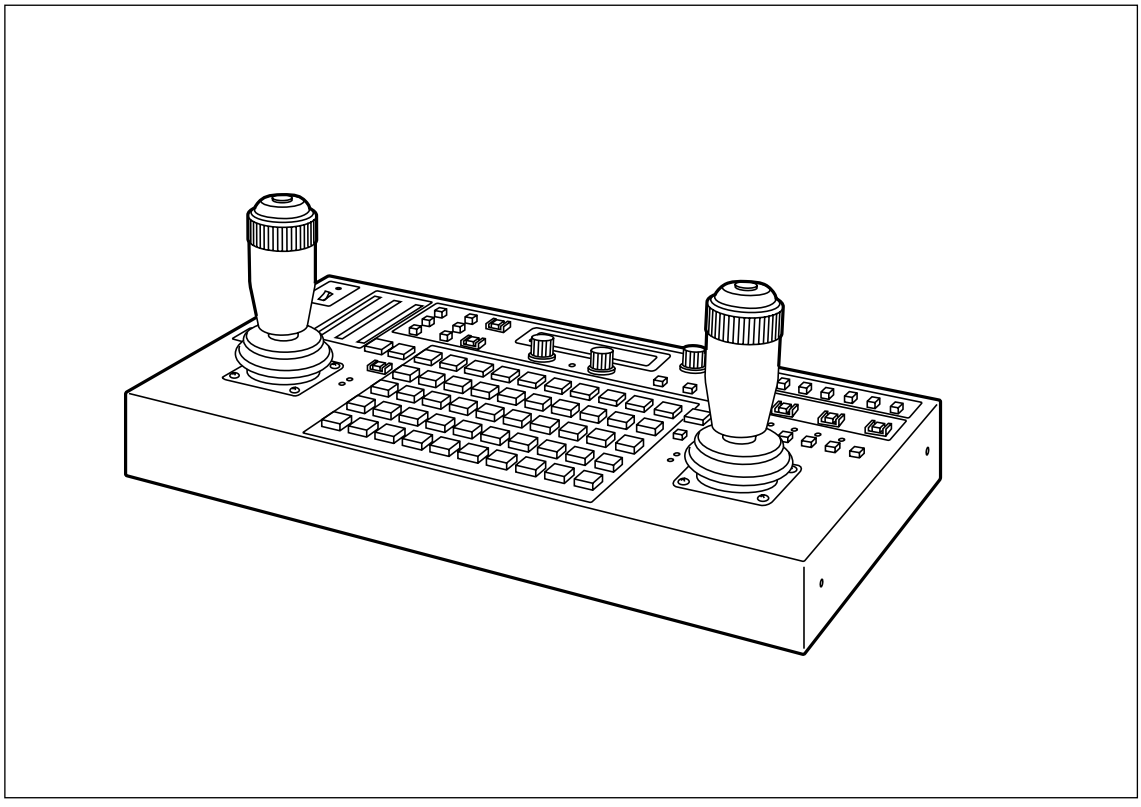
Operating Instructions

Multi-Function Controller

AW-RP655N



Panasonic®

Before attempting to connect, operate or adjust this product,
please read these instructions completely.

Printed in Japan
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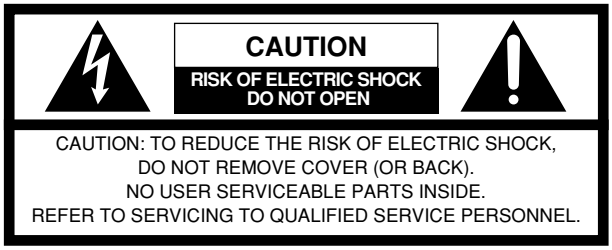
Safety precautions



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

For CANADA

This class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING:

- **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**
- **THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**

WARNING:

TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC Note:
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.

Warning:
To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

Note:

The rating plate (serial number plate) is on the bottom of the unit.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

A warning that an apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

▭ indicates safety information.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord form being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

▭ indicates safety information.

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Introduction

- This unit is a multi-function controller that controls the pan/tilt head system (pan/tilt head and convertible camera).
- Up to 2 additional units may be attached to this unit, allowing for control of the pan/tilt head system from 3 locations.
  Please use a 10BASE-T straight cable (UTP category 5) to connect to this unit.
- 4-pin XLR Inter Communication (INCOM)-use headsets may be connected to communicate with this unit or an external unit.
- Up to 5 additional pan/tilt head systems may be connected to this unit. The connection between the pan/tilt head system and this unit may be extended up to 1000 m when using AW-PH360, AW-PH350 or AW-PH650 as the pan/tilt head. The distance may be extended to 800 m when using other pan/tilt heads.
- Use cable compensation unit AW-RC400 when using a cable compensator for the video signal from the pan/tilt head system.

Pan/tilt heads supported	AW-PH300, AW-PH300A, AW-PH350, AW-PH360, AW-PH500, AW-PH600, AW-PH650 **<Note>** The camera function cannot be controlled when the AW-PH500 is used.

Recommended Adapter	**Use the dedicated AC adapter (AW-PS505A) for the power supply.**

Caution

- The operating mode may be switched by changing the settings of the ID Switch (see page 13) in the back of this unit.
  - Main Mode: All of this unit's functions may be used.
  - Panel Mode: The unit will operate as an extended control panel when the AW-RP655 is operated in main mode. Only the INCOM connector for INCOM headsets and the TO CONTROL PANEL IN/OUT terminal may be used as connectors with external units.

  In this guide, "control panel" will be used to describe the AW-RP655 set to Panel Mode.
- This unit will set the standard position for the operating lever (ZOOM lever, PAN/TILT lever, FOCUS/IRIS dial) when the power is turned on and during OPERATE ON. Do not touch the operating lever while the standard position setting is taking place.
- Please contact a specialist when discarding this unit in consideration of the environment.

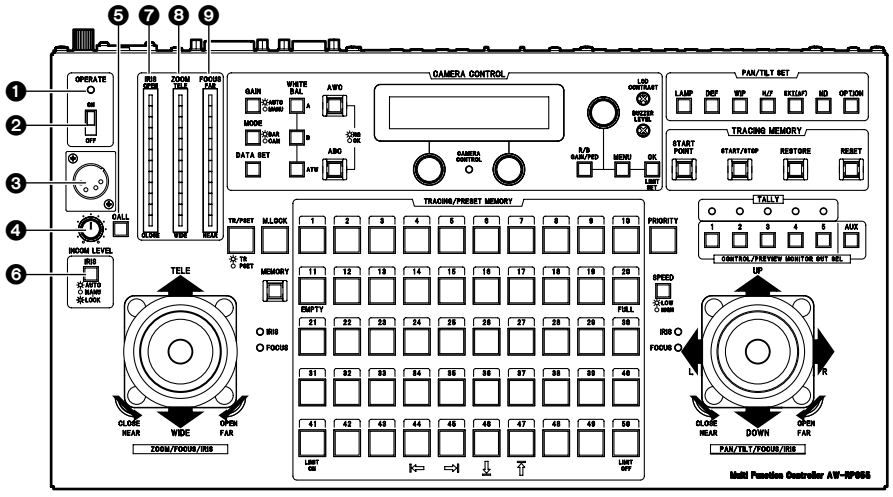
Accessories

Rack mounting adapters (5U) **2**

Mounting screws (M4 × 8 mm) **4**

Parts and their functions

■ Control panel



❶ OPERATE lamp

This lamp will come on when power is supplied to this unit and the OPERATE switch is on.

❷ OPERATE switch

This controls the power of all pan/tilt head systems (pan/tilt head and convertible camera) connected to this unit. Allow at least 5 seconds between ON/OFF operations. Setting the OPERATE switch to OFF will not turn the power to this unit off. To turn the power to this unit completely off, the power switch of AC adapter must be turned off.

❸ INCOM connector

The headset for inter-communications purposes is connected here.

❹ LEVEL control

This is used to adjust the volume of the headset's receiver.

❺ CALL button

When this button is pressed, the buzzers on the other connected control panels sound, and the CALL button's lamp comes on.

❻ IRIS [AUTO/MAN/LOCK] button

This is used to select how to adjust the lens iris of the pan/tilt head system currently selected.
Each time it is pressed, the AUTO, MANU or LOCK setting is selected in turn.

AUTO: The lens iris is adjusted automatically, and the IRIS button's lamp comes on. If the FOCUS/IRIS dial for adjusting the iris is rotated when AUTO has been selected, the IRIS button's lamp flashes as a warning.

MANU: The lens iris is adjusted manually using the FOCUS/IRIS dial.
At this setting, the IRIS button's lamp goes off.

LOCK: The lens iris is fixed at the position where it was adjusted manually, and the IRIS button's lamp flashes.
At the LOCK setting, the position of the lens iris will not be changed even if the FOCUS/IRIS dial is turned.

Set the button to the MANU position when entering the lens iris position in the TRACING/PRESET MEMORY button.

❼ IRIS indicator

This indicates the lens iris position of the pan/tilt head system currently selected using 12 steps (from CLOSE to OPEN).

❽ ZOOM indicator

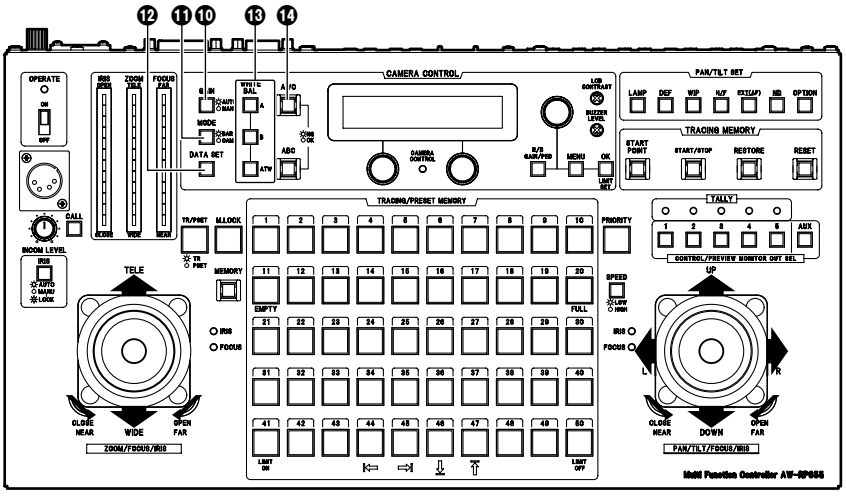
This indicates the lens zoom position of the pan/tilt head system currently selected using 12 steps (from WIDE to TELE).

❾ FOCUS indicator

This indicates the lens focus position of the pan/tilt head system currently selected using 12 steps (from NEAR to FAR).

The IRIS, ZOOM and FOCUS indicator displays may not appear depending on the model of pan/tilt head and camera used.
Contact your local dealer for details.

Parts and their functions



⑩ GAIN [AUTO/MAN] button

This is used to select the camera's gain control mode in the pan/tilt head system currently selected.
Each time it is pressed, the AUTO mode or MANUAL mode is selected in turn.
In the AUTO mode, the button's lamp comes on; in the MANUAL mode it goes off.
If, in the AUTO mode, the R/B GAIN/PED button is pressed and the gain is adjusted, the maximum gain can be set to one of two levels: AGC L or AGC H.
If, in the MANUAL mode, the R/B GAIN/PED button is pressed and the gain is adjusted, any setting from 0 dB to the night eye mode can be selected for the gain.

⑪ MODE [BAR/CAM] button

This is used to select the camera's video output signals in the pan/tilt head system currently selected.
Each time it is pressed, the camera's color bar signals or video signals are selected in turn.
When the color bar signals are selected, the button's lamp comes on; when the video signals are selected, it goes off.

⑫ DATA SET button

At times when the multi-function controller has not recognized a particular pan/tilt head system, such as when the power to the pan/tilt head system is turned on or when a particular pan/tilt head system has been connected after the multi-function controller's OPERATE switch has been set to ON, select the pan/tilt head system concerned, and then press the DATA SET button. The power of the selected pan/tilt head system will be turned on, and the camera's initial settings will be started.

⑬ WHITE BAL [A/B/ATW] buttons

These are used to select the camera's white balance adjustment in the pan/tilt head system currently selected.

A: When the A button is pressed, the white balance status entered in the camera's memory A is established, and the A button's lamp comes on. If the AWC button is pressed after the A button was pressed, the white balance is automatically adjusted and entered in the camera's memory A.

B: When the B button is pressed, the white balance status entered in the camera's memory B is established, and the B button's lamp comes on. If the AWC button is pressed after the B button was pressed, the white balance is automatically adjusted and entered in the camera's memory B.

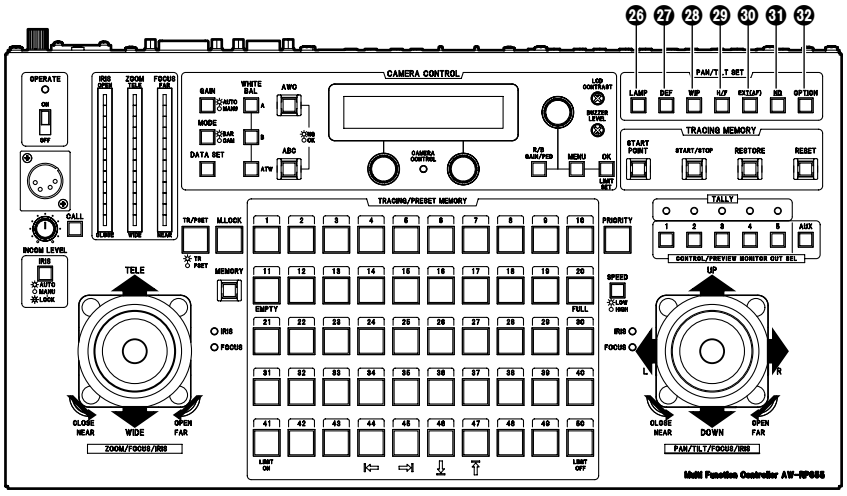
ATW: When the ATW button is pressed, the white balance is set to the automatic adjustment mode, and the ATW button's lamp comes on.

⑭ AWC button

When the WHITE BAL [A] button or [B] button has been selected, press the AWC button to automatically adjust the white balance and enter the adjustment in the camera's memory A or memory B.
While the white balance is being adjusted, the AWC button's lamp flashes; when it has been adjusted properly, it goes off. It comes on when it was not possible to perform the adjustment.

- This function does not work if the MODE button has been set to BAR (the MODE button's lamp is lighted) or if ATW has been selected.
- It may not be possible to adjust the white balance if there is no white object on the screen being shot.
- If a pan/tilt head other than the AW-PH350 is being used, the AWC button's lamp also goes off if the white balance was not adjusted properly.

Parts and their functions



⑮ ABC button

This is used to automatically adjust camera's black balance in the pan/tilt head system currently selected. Set the IRIS [AUTO/MANU/LOCK] button to AUTO (the IRIS button is now lighted), and press the ABC button. While the black balance is being adjusted, the ABC button's lamp flashes; when it has been adjusted properly, it goes off. It comes on when it was not possible to perform the adjustment.

If a pan/tilt head other than the AW-PH350 is being used, the ABC button's lamp also goes off if the black balance was not adjusted properly.

⑯ LCD panel

This displays the statuses of the current settings.

⑰ CAMERA CONTROL lamp

This comes on when communication with the camera in the currently selected pan/tilt head system has been established properly. It goes off when there is a problem with the communication.

This lamp will remain off even when there is a normal signal when using AW-PH300/AW-PH300A/AW-PH500/AW-PH600 for the pan/tilt head.

⑱ Menu setting control (L)

This is used to change the item or the value of the item displayed on the left at the bottom of the LCD panel in the setting menu mode.

⑲ Menu setting control (R)

This is used to change the item or the value of the item displayed on the right at the bottom of the LCD panel in the setting menu mode.

⑳ Menu setting control (main)

This is used to select the item or change the value of the item displayed at the top of the LCD panel in the setting menu mode.

㉑ R/B GAIN/PED button

Press this button to adjust the camera's R/B gain or R/B pedestal in the pan/tilt head system currently selected. Each time it is pressed, the adjustment mode is set to ON or OFF in turn.
When the adjustment mode is set to ON, the button's lamp comes on; when it is OFF, the lamp goes off.

㉒ MENU button

This is used to select ON or OFF for the setting menu mode of the pan/tilt head system currently selected. Each time it is pressed, the menu mode is set to ON or OFF in turn.
When the setting menu mode is set to ON, the button's lamp comes on, and the setting menu appears on the LCD panel. In this status, the MENU button is used to select the setting menu items as well.
When the setting menu mode is set to OFF, the button's lamp goes off, and the LCD panel returns to its original display.

㉓ LCD CONTRAST control

This is used to adjust the contrast of the LCD panel.

㉔ BUZZER LEVEL control

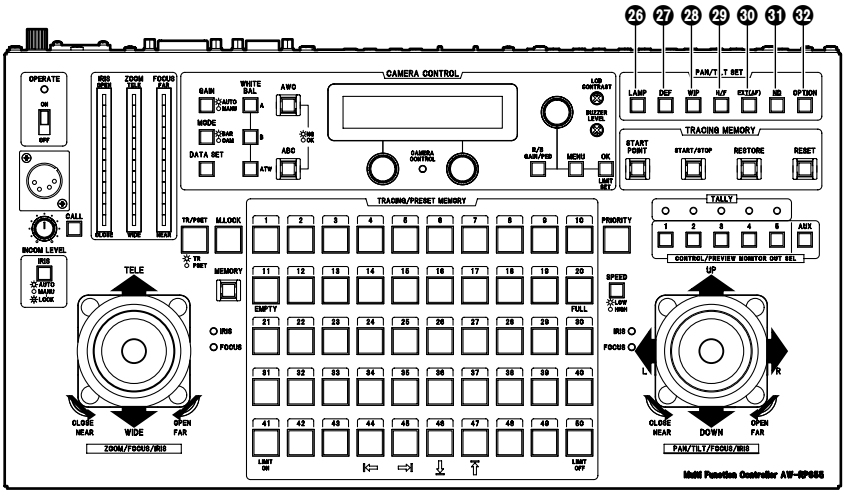
Adjusts the BUZZER volume level when the CALL button is pressed.

㉕ OK button

This is pressed to select setting menu items or to enter the values of items.

It is possible to switch the speed at which the setting value of some of the items in the setting menu changes each time jog dial ⑱, ⑲ or ⑳ is pressed.
(See pages 33 to 35)

Parts and their functions



㉖ LAMP button

This controls the ON and OFF of the halogen lamp which is connected to the pan/tilt head system currently selected.

Each time it is pressed, the lamp is turned ON or OFF in turn.

When the halogen lamp is ON, the button's lamp comes on; when it is OFF, the lamp goes off.

It flashes when the halogen lamp has not been connected or when the lamp has been disconnected or some other problem has occurred.

㉗ DEF button

This sets the defroster function ON or OFF when a pan/tilt head (AW-PH600/AW-PH650) equipped with a defroster function is used in the pan/tilt head system currently selected.

Each time it is pressed, the function is turned ON or OFF in turn.

When the defroster is ON, the button's lamp comes on; when it is OFF, the lamp goes off.

㉘ WIP button

This sets the wiper function ON or OFF when a pan/tilt head (AW-PH600/AW-PH650) equipped with a wiper function is used in the pan/tilt head system currently selected.

Each time it is pressed, the function is turned ON or OFF in turn.

When the wiper is ON, the button's lamp comes on; alternatively, when it is OFF, it goes off.

㉙ H/F button

This sets the heater/fan function ON or OFF when a pan/tilt head (AW-PH600/AW-PH650) equipped with a heater/fan function is used in the pan/tilt head system currently selected.

Each time it is pressed, the function is turned ON or OFF in turn.

When the heater/fan is ON, the button's lamp comes on; when it is OFF, the heater/fan goes off.

㉚ EXT (AF) button

EXT (AF) Button

If a lens with an extender function is used in the selected pan/tilt head system, the extender function is set from ON to OFF or vice versa each time the EXT (AF) button is pressed.

If a lens (AW-LZ16AF7G) with an AF function is used in the selected pan/tilt head system, the AF function of the lens is set from ON to OFF or vice versa each time the EXT (AF) button is pressed.

In either case, the button lamp is lighted at the ON setting, and it is extinguished at the OFF setting.

❊ This button can be used to turn the function ON or OFF only when the AW-PH350 pan/tilt head is connected. When the pan/tilt head is not used and only the camera is connected, select ON or OFF using the menu item.

㉛ ND button

This sets the ND filter function ON or OFF when a lens equipped with an ND filter function is used in the pan/tilt head system currently selected.

Each time it is pressed, the function is turned ON or OFF in turn.

When the ND filter is ON, the button's lamp comes on; when it is OFF, the lamp goes off.

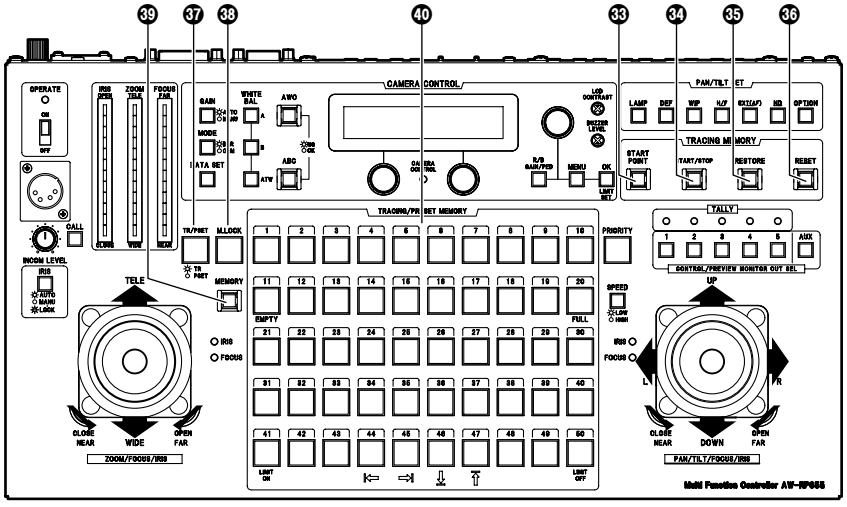
㉜ OPTION button

This controls the short- or open-circuiting of the OPTION SW CONTROL OUT connector of the AC adapter (AW-PS300A) which is connected to the pan/tilt head system currently selected.

Each time it is pressed, short-circuiting or open-circuiting is selected in turn.

When the connector is short-circuited, the button's lamp comes on; when it is open-circuited, the lamp goes off.

Parts and their functions



㉝ START POINT button

Press this to set the position at which the tracing memory is to be started.

㉞ START/STOP button

Press this to start or stop entry into the tracing memory.

㉟ RESTORE button

Press this to correct or change what has been entered in the tracing memory.

㊱ RESET button

Press this to erase what has been entered in the tracing memory.

㊲ TR/PSET button

This is used to select the tracing memory mode or preset memory mode.

Each time it is pressed, the tracing memory mode or preset memory mode is selected in turn.

When the tracing memory mode is selected, the button's lamp comes on; when the preset memory mode is selected, the lamp goes off.

㊳ M.LOCK button

This is used to disable or enable the recording of settings in the tracing memory or preset memory.

Each time it is pressed, recording disable or enable is selected in turn.

When recording is disabled, the button's lamp comes on; when it is enabled, the lamp goes off.

㊴ MEMORY button

This is pressed when the pan/tilt head system's settings are to be entered as a preset memory into one of the TRACING/PRESET MEMORY buttons [1] through [50]. Up to 50 settings can be entered per pan/tilt head system into a preset memory.

Pan/tilt head system's settings

Pan/tilt head:
Pan/tilt position
Camera:
Zoom, focus, iris, white balance

How to enter settings into the preset memory

① Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.
② Select the preset memory mode using the TP/PSET button.
③ Set the pan/tilt head system.
④ While pressing the MEMORY button, press one of the TRACING/PRESET MEMORY buttons from [1] through [50] into which the settings are to be entered.

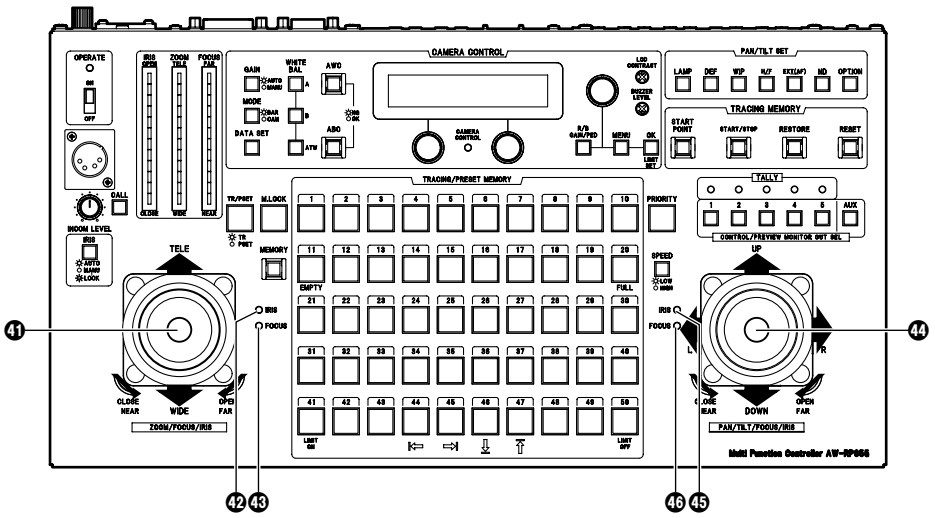
㊵ TRACING/PRESET MEMORY buttons [1] to [50]

Tracing memory or preset memory data is entered into these buttons.

Tracing memory: [1] through [10]
Preset memory: [1] through [50]

It is not possible to enter preset memory data into any button in which a tracing memory has already been entered.

Parts and their functions



㊶ ZOOM lever, FOCUS/IRIS dial

These are used to adjust the lens zoom in the pan/tilt head system currently selected.
Depending on the direction in which the ZOOM lever is tilted, TELE (telephoto) or WIDE (wide angle) is set, and depending on the angle at which it is tilted, the zoom speed is adjusted.
The lens focus or lens iris is adjusted using the dial at the top of the lever.
Using the button on the top of the lever, the dial's function can be switched so that the dial will serve as a focus adjustment dial or iris adjustment dial.
When the focus adjustment dial function has been selected, the FOCUS lamp on the right of the lever comes on; alternatively, when the iris adjustment dial function has been selected, the IRIS lamp comes on.

When the ZOOM lever dial functions as an iris adjustment dial, the PAN/TILT lever dial on the other side functions as a focus adjustment dial, and the FOCUS lamp on the left of the PAN/TILT lever comes on.
Similarly, when the ZOOM lever dial functions as a focus adjustment dial, the PAN/TILT lever dial on the other side functions as an iris adjustment dial, and the IRIS lamp on the left of the PAN/TILT lever comes on.

㊷ IRIS lamp

This comes on when the dial on the top of the ZOOM lever functions as an iris adjustment dial.

㊸ FOCUS lamp

This comes on when the dial on the top of the ZOOM lever functions as a focus adjustment dial.

㊹ PAN/TILT lever, FOCUS/IRIS dial

These are used to adjust the direction of the pan/tilt head in the pan/tilt head system currently selected.
When the PAN/TILT lever is panned in the L/R direction, the pan/tilt head direction changes to the left or right; when it is tilted in the UP/DOWN direction, it changes in the up or down direction.
The speed is adjusted by the angle to which the lever is tilted.
The lens focus or lens iris is adjusted using the dial at the top of the lever.
Using the button on the top surface of the lever, the dial's function can be switched so that the dial will serve as a focus adjustment dial or iris adjustment dial.
When the focus adjustment dial function has been selected, the FOCUS lamp on the left of the lever comes on; alternatively, when the iris adjustment dial function has been selected, the IRIS lamp comes on.

When the PAN/TILT lever dial functions as an iris adjustment dial, the ZOOM lever dial on the other side functions as a focus adjustment dial, and the FOCUS lamp on the right of the ZOOM lever comes on.
Similarly, when the PAN/TILT lever dial functions as a focus adjustment dial, the ZOOM lever dial on the other side functions as an iris adjustment dial, and the IRIS lamp on the right of the ZOOM lever comes on.

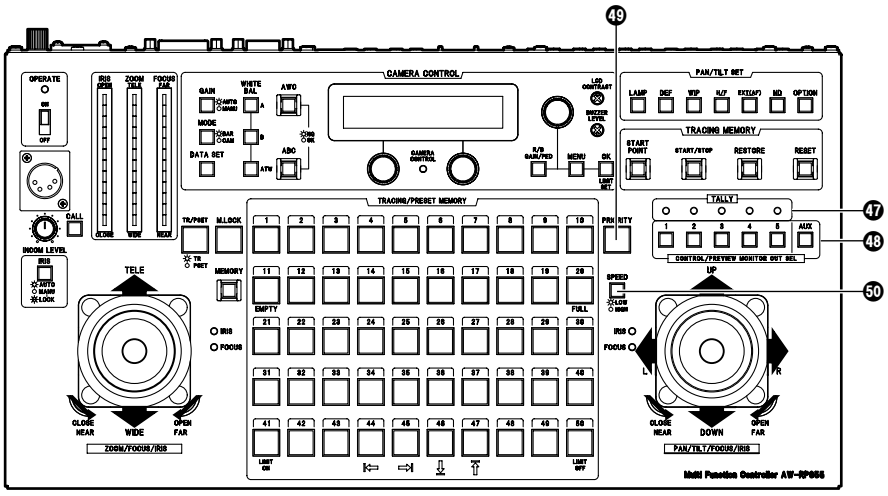
㊺ IRIS lamp

This comes on when the dial on the top of the PAN/TILT lever functions as an iris adjustment dial.

㊻ FOCUS lamp

This comes on when the dial on the top of the PAN/TILT lever functions as a focus adjustment dial.

Parts and their functions



47 TALLY lamps [1] to [5]

When tally signals are input to TALLY connectors [1] through [5] on the main unit, the lamps with the numbers corresponding to the connectors come on.

48 CONTROL/PREVIEW MONITOR OUT SEL buttons [1] to [5], [AUX]

Pressing buttons 1 to 5 will select the connected pan/tilt head system.

When the AW-RC400 is connected, the button of the chosen number will illuminate and the video signal from the selected pan/tilt head system will be output to the AW-RC400's MONITOR OUT 1 to 2 terminals.

The AUX switch will not function in a system made with the AW-RC400.

49 PRIORITY button

The pan/tilt head may be controlled by pressing this button when multiple control panels are connected to this unit.

This light will come one in control mode and will turn off in non-control mode.

This button's light is always on when there are no control panels connected to this unit.

50 SPEED button

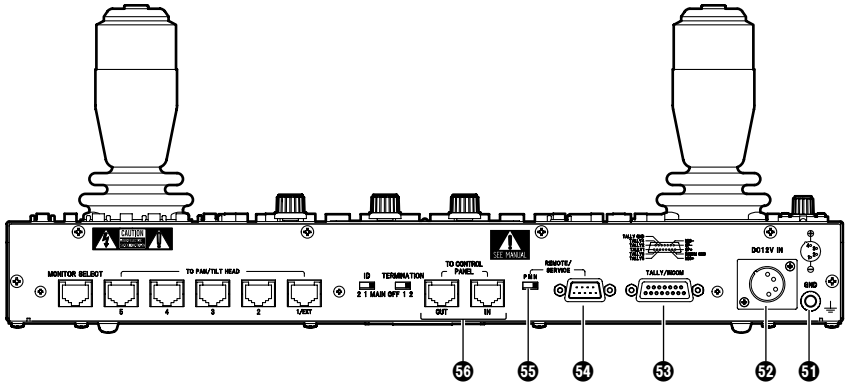
This is used to select the control (pan, tilt, zoom, focus, iris) speed of the pan/tilt head system currently selected. Each time it is pressed, the high-speed mode or low-speed mode is selected in turn.

The button's lamp comes on in the high-speed mode, and it remains off in the low-speed mode.

Using the SPEED SELECT item on the setting menu, the speed can be set in one of three steps for the high-speed mode and for the low-speed mode.

Parts and their functions

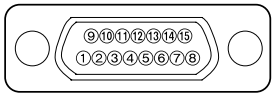
■ Rear Connector Panel



㊶ GND terminal
Use to ground the unit.

㊷ DC12V IN terminal
Connects the AW-PS505A AC adapter (sold separately).

㊸ TALLY/INCOM terminal
Connect this to the TALLY/INCOM connector on the video switcher or other units.
When the TALLY connector is set to the GND level, the TALLY lamp (㊼) lights. Do not apply a voltage in excess of 5V to this connector.

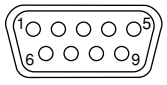


Pin layout as seen from the back panel of AW-RP655

Pin No.		Signal Name
1		TALLY1
	9	TALLY2
2		TALLY3
	10	TALLY4
3		TALLY5
	11	TALLY GND
4		– – –
	12	– – –
5		– – –
	13	– – –
6		MIC +
	14	MIC –
7		INCOM GND
	15	SP –
8		SP +

Connect a 4-wire INCOM system to the INCOM connector.

㊹ REMOTE/SERVICE connector
A personal computer or other external equipment is connected here when a pan/tilt head system is to be controlled by these equipments.

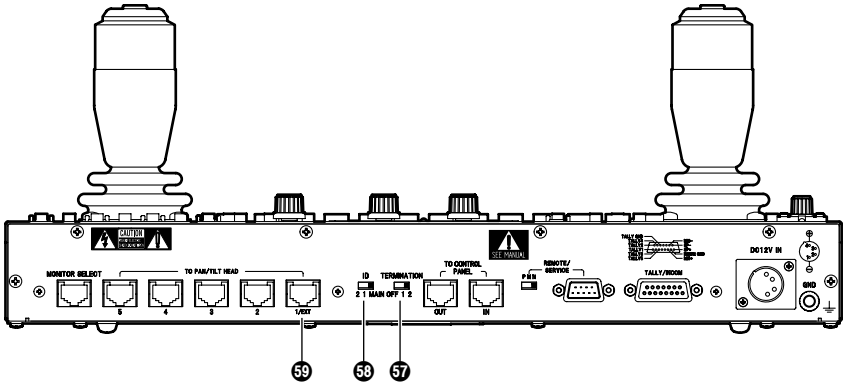


Pin No.	Signal Name
1	– – –
2	RXD IN
3	TXD OUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	– – –

㊺ REMOTE/SERVICE switch
Function selection switch for the REMOTE/SERVICE terminal. Set the switch in the N position during use.

㊻ TO CONTROL PANEL IN terminal
TO CONTROL PANEL OUT terminal
Connects AW-RP655 (control panel) set to PANEL MODE.
Connect the IN terminal of this unit to the OUT terminal of the control panel, or the OUT terminal of this unit to the IN terminal of the control panel.

Parts and their functions



㊼ TERMINATION switch

Termination switch for the control signal communicating with the control panel.

- Set this switch to “2” when there are no control panels connected to this unit.
- Set this switch and the control panel TERMINATION switch to “1” when there is 1 control panel connected to this unit.
- Set the TERMINATION switches on the equipment on both sides of the connection to “1” when 2 control panels are connected to this unit and set the TERMINATION switches of devices in the middle of the connection to “OFF.”

㊽ ID switch

Switch to set the operating mode for this unit.

MAIN:

Operates in Main Mode.

1/2:

Operates in Panel Mode.

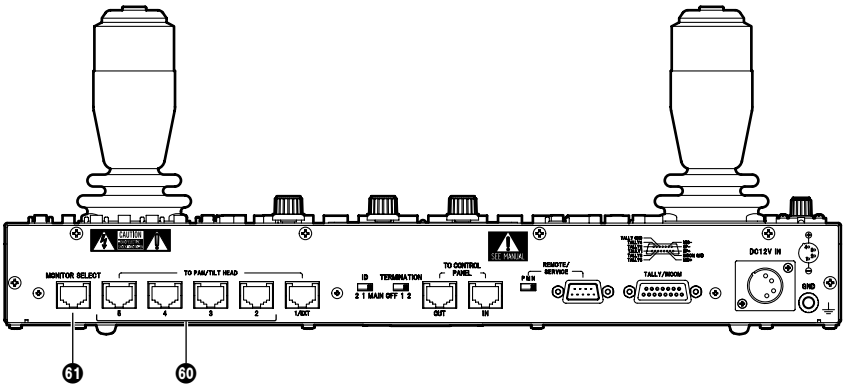
In the case of a system with 2 connected control panels, set each control panel setting to a different value.

㊾ TO PAN/TILT HEAD 1/EXT terminal

- Functions as the pan/tilt head’s connection terminal when the EXT CONTROL OUT is set to OFF on the controller setting menu (see page 36).
  Connect a 10BASE-T straight cable (UTP category 5) to the pan/tilt head’s IP/RP terminal.
  May be extended up to a maximum of 1000 m.
  Use the RS-232C/RS-422 converter and connect to pan/tilt head’s RS-232C control terminal when connecting to the AW-PH300, AW-PH300A, AW-PH500 or AW-PH600.
- Functions as the AW-DU600 dial up adapter’s connection terminal when the EXT CONTROL OUT is set to ON on the controller setting menu (see page 36).
  Connect a 10BASE-T straight cable (UTP category 5) to the AW-DU600’s PAN/TILT CONTROL IN terminal. May be extended up to a maximum of 1000 m.

For more details, refer to the operating instructions of the dial up adapter. Use the following terms instead:

- AW-RP605 ⇨ AW-RP655
- EXTERNAL CONTROL OUT terminal
  ⇨ TO PAN/TILT HEAD 1/EXT terminal
- There are no software version restrictions for this unit in systems with dial up adapters.



⑥⓪ TO PAN/TILT HEAD 2 to 5 terminal

- Functions as the pan/tilt head's connection terminal when EXT CONTROL OUT is set to OFF on the controller setting menu (see page 36).
  Connect a 10BASE-T straight cable (UTP category 5) to the pan/tilt head's IP/RP terminal.
  May be extended up to a maximum of 1000 m.
  Use the RS-232C/RS-422 converter and connect to pan/tilt head's RS-232C control terminal when connecting to the AW-PH300, AW-PH300A, AW-PH500 or AW-PH600.
- Cannot be used when the EXT CONTROL OUT is set to ON on the controller setting menu (see page 36).

⑥① MONITOR SELECT terminal

Connect a 10BASE-T straight cable (UTP category 5) to the AW-RC400 cable compensation unit's MONI SEL IN terminal. May be extended up to a maximum of 50 m.
The video signal from the pan/tilt head system connected to the input terminal, whose number is selected on this unit, will be sent from the AW-RC400's MONITOR 1, 2 terminals.

Connections

Turn off the power of all components before proceeding with the connections.

- Use the AW-PS505A (sold separately) AC adapter for this unit and the AW-PS300A (sold separately) for the pan/tilt head.

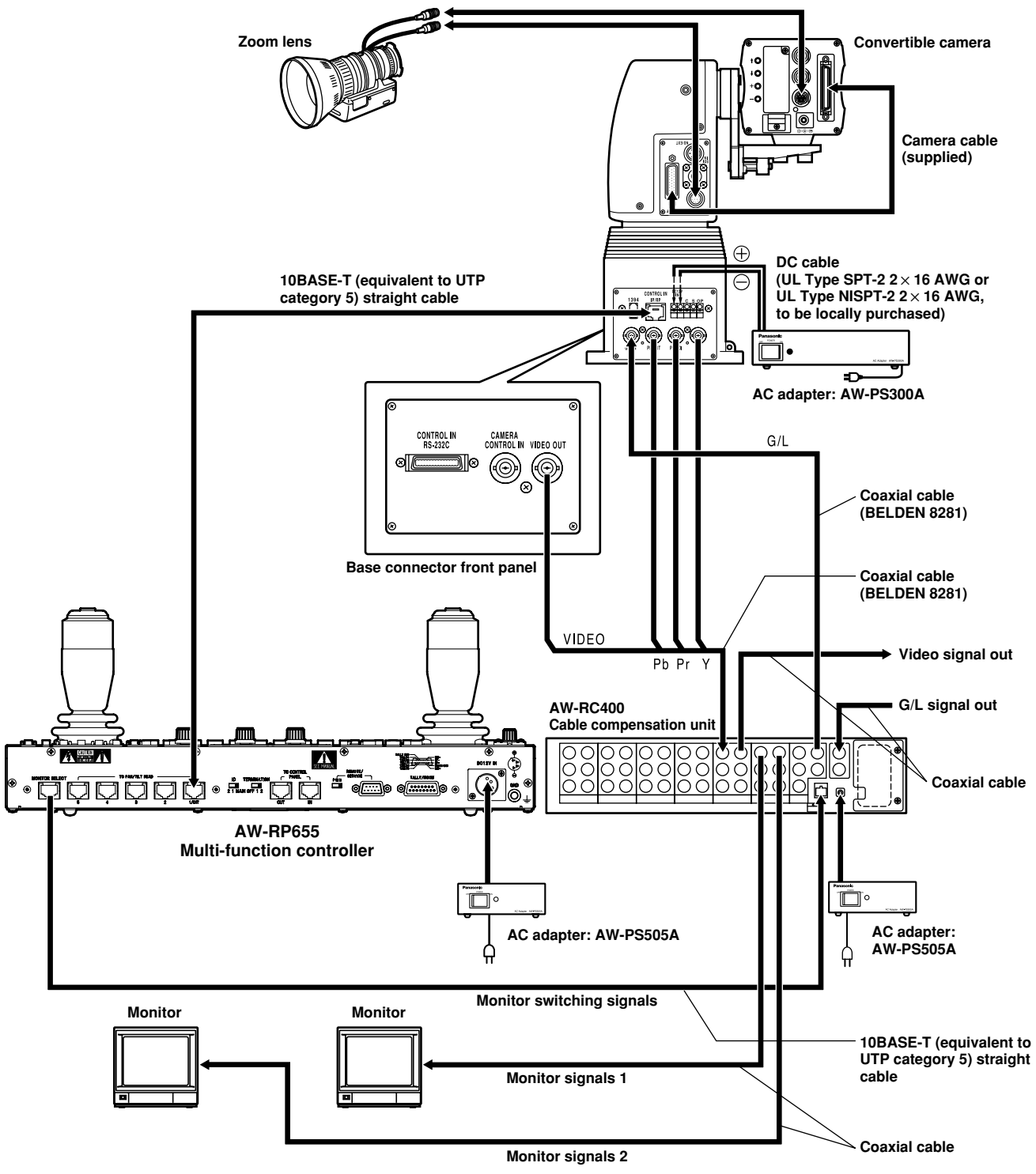
- Use a DC power cable (which has a nominal cross-sectional area of at least 1.25 mm^2 and which complies with the Electrical Appliance and Material Control Law) to connect the AW-PH350 pan/tilt head and AW-PS300A AC adapter.
  The maximum extension distance between the AC adapter for the pan/tilt head and the pan/tilt head itself is 30 meters.

- Connect the AW-PH350 pan/tilt head and convertible camera using the composite camera cable (AW-CA50T29) or component camera cable (AW-CA50C29).

- Connect the iris control cable of the motorized zoom lens to the camera and the remote (zoom/focus control) cable to the pan/tilt head.

For further details on how to connect each component, refer to the operating instructions of the component concerned.

Connections



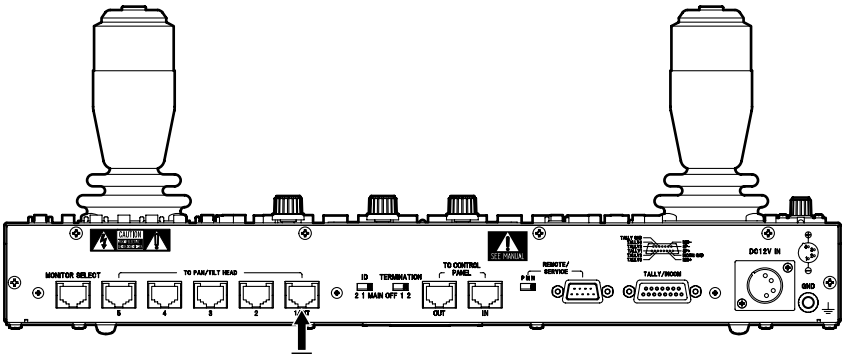
Connections

When using the AW-PH300, AW-PH300A, AW-PH500 or the AW-PH600 pan/tilt head

The control signal from this unit must be converted from RS-422 to RS-232C.

Consult with your dealer concerning the RS-232C/RS-422 converter and connecting cable.

Shown below is an example of the connections performed by the RS-232C/RS-422 converter.



Pan/tilt head:
To RS-232C connector

RS-232C/RS-422 converter

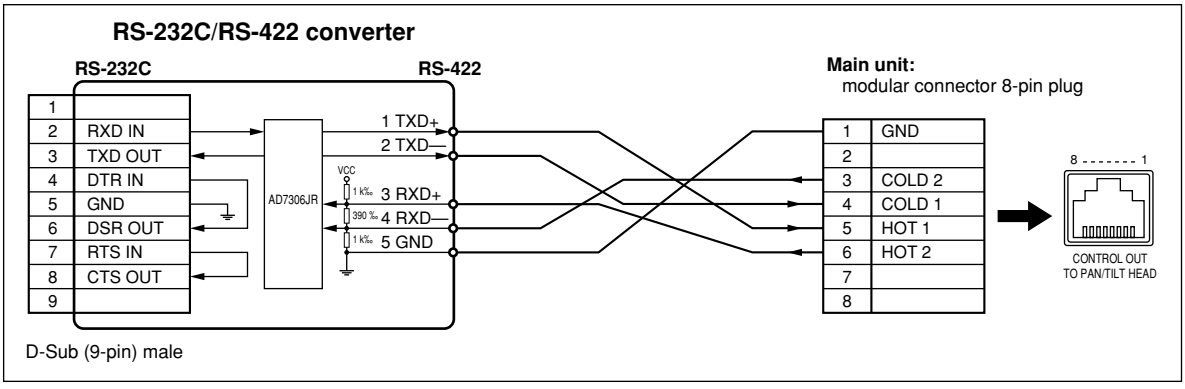
Cable length:
Less than 800 meters

Cable length:
Less than 10 meters

RS-232C side

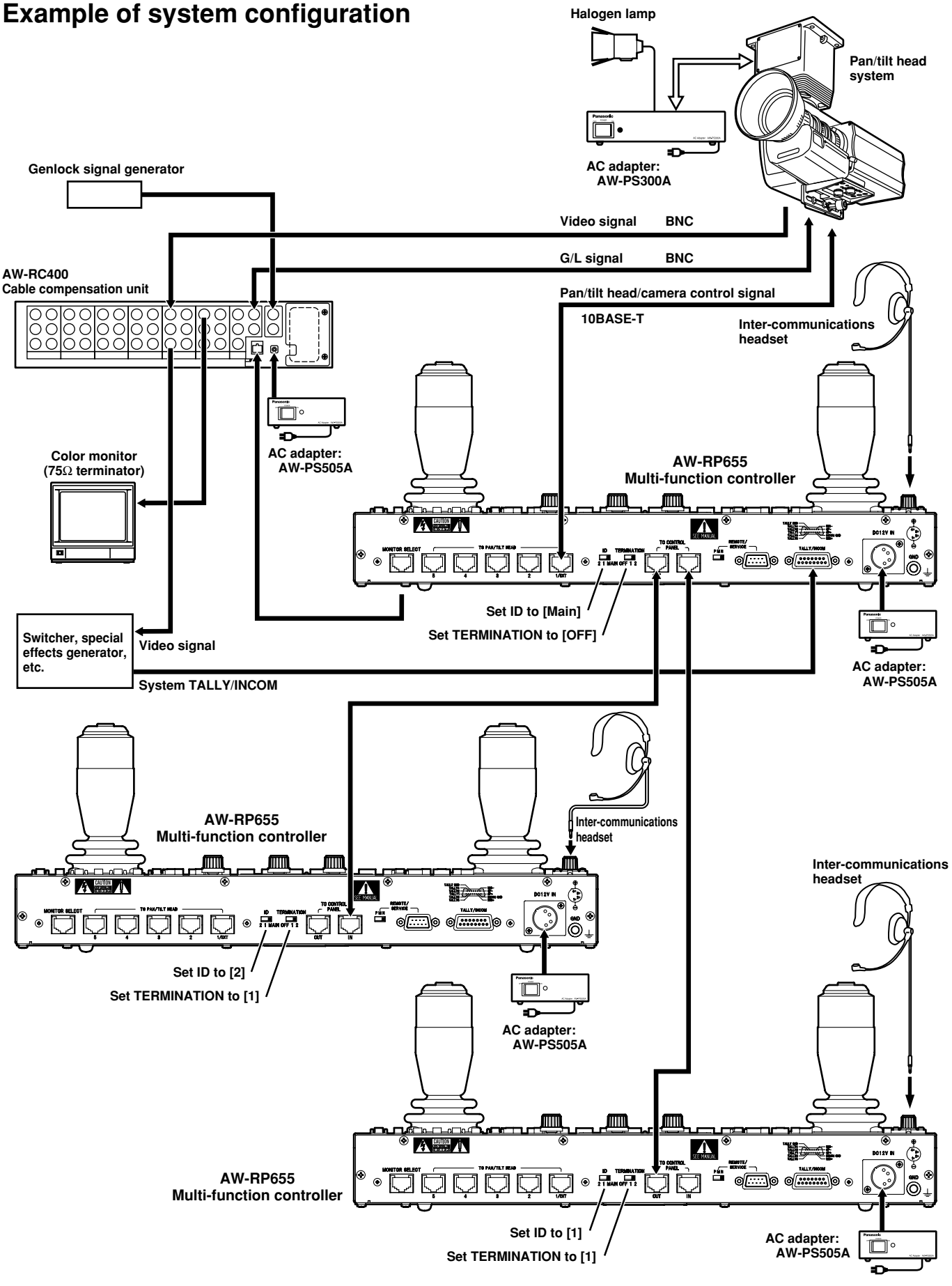
RS-422 side

The RS-232C cable AW-CA28T9 may be used for the pan/tilt head AW-PH300 or AW-PH300A.



Connections

Example of system configuration



■ Turning on the power

1. Set all the power switches of the connected components and the power switch of the AC adapter to ON.

2. Set this unit's OPERATE switch to ON.
   Power will be supplied to the pan/tilt head system connected to this unit, and the camera's initial settings will be performed in sequence.

   - At the same time as the camera's initial settings are performed, the control panel's PAN/TILT lever and ZOOM lever settings are performed as well. Do not touch the levers while the display below appears on the LCD panel.

     ```
     *** INITIALIZE ***
        PLEASE WAIT
     ```

   - It takes about 30 seconds to perform the camera's initial settings for each camera. The pan/tilt head system cannot be controlled until these settings are completed.
   - Be sure to set power switches on all connected equipment and AC adapters to ON before setting the control panel's OPERATE switch to ON.

When the pan/tilt head system is connected (or changed) and its power is turned on for the first time, the connected cameras will be initialized. Upon completion of the initialization, adjust or set the following items. After the items are adjusted or set, proceed to the section entitled "Setting the travel range (limiters) of the pan/tilt head".
Once the adjustments are made, there is no need for any re-adjustments unless changes are made to the pan/tilt head, camera or lens. (The items to the re-set or re-adjusted differ depending on the unit which is changed.)

■ Setting the camera model

These steps must be taken without fail when using the AW-PH300, AW-PH300A or AW-PH600 pan/tilt head.

1. Press the MENU button, and turn the menu setting control (main) to display the CONTROLLER SETTING item on the top line of the LCD panel.

   ```
   CONTROLLER SETTING
              → OK Key
   ```

2. Press the OK button. The following item appears on the LCD panel.

   ```
   SIGNAL SELECT
    C.VIDEO → C.VIDEO
   ```

3. Turn the menu setting control (main) to display the following item on the LCD panel.

   ```
   Camera Model Select
    CAM1          No Camera
   ```

4. Turn the menu setting control (L) to select the cameras connected, and turn the menu setting control (R) to select the camera models connected.

5. After all the camera models connected are set, press the MENU button to restore the original display to the LCD panel.

❉ These settings need not be performed when connecting a pan/tilt head other than the AW-PH300, AW-PH300A or AW-PH600. Either each camera model will be automatically identified or the pan/tilt head will not allow a convertible camera to be connected.

■ Adjusting the minimum start speed of the pan/tilt head

When the pan/tilt head is to be operated manually using the joystick, its minimum start speed is automatically adjusted to ensure that the pan/tilt head will start moving smoothly in response to the angle to which the pan/tilt lever is tilted. (This will reduce the amount of play in the pan/tilt lever.)

1. Press the MENU button, and turn the menu setting control (main) to display the P/T SETTING item on the top line of the LCD panel.

```
P/T SETTING
          ➔ OK Key
```

2. Press the OK button. The following item appears on the LCD panel.

```
PAN DIRECTION
                NORMAL
```

3. Turn the menu setting control (main) to display the PAN/TILT MIN SPD Set item on the top line of the LCD panel.

```
PAN/TILT MIN SPD Set
ADJ Start Push OK Key
```

4. When the OK button is pressed, the OK button lamp starts flashing, the speed is automatically adjusted in the sequence of right, up, left and down. When all the adjustments are completed, the display status shown in step 3 above is restored.

5. If an adjustment could not be made during the adjustment process, PAN/TILT ADJ Error appears on the bottom line of the LCD panel, and the operation is shut down.

```
PAN/TILT MIN SPD Set
 PAN/TILT ADJ Error
```

6. Now re-balance the camera which is installed on the pan/tilt head. When the OK button is then pressed, the display status shown in step 3 above is restored, and the automatic adjustments are commenced again.

```
PAN/TILT MIN SPD Set
ADJ Start Push OK Key
```

7. After all the adjustments are completed, press the MENU button to restore the original display to the LCD panel.

❈ When the menu is set to these adjustment items, no operations can be initiated by the pan/tilt lever. Upon completion of the automatic adjustments, be absolutely sure to change the menu to another item.

■ Adjusting the backlash compensation

Play in the gears may give rise to backlash when the pan/tilt head is moved. This adjustment serves to provide compensation for reducing the amount of this backlash. (Backlash: For instance, after the pan/tilt head has moved from right to left and then come to a standstill, there is a delay in the start of the movement when it moves in the opposite direction. This happens because of play in the gears. The same phenomenon also occurs when the head moves from left to right, up to down or down to up.)

1. Press the MENU button, and turn the menu setting control (main) to display the P/T SETTING item on the top line of the LCD panel.

```
P/T SETTING
          ➔ OK Key
```

2. Press the OK button. The following item appears on the LCD panel.

```
PAN DIRECTION
                NORMAL
```

3. Turn the menu setting control (main) to display the Backlash Supplement item on the top line of the LCD panel.

```
Backlash Supplement
  A       =       OFF
```

4. Turn the menu setting control (L) to select the item to be set, and turn the menu setting control (R) to set the data.

Item	Data
A (compensation for panning)	ON (compensation)/ OFF(no compensation)
B (compensation for tilting)	ON (compensation)/ OFF (no compensation)
C (amount of compensation for panning)	1 (min.) to 7 (max.)
D (amount of compensation for tilting)	1 (min.) to 7 (max.)

❈ Use the OFF setting if backlash is not a concern. When making an adjustment, be absolutely sure to move the pan/tilt head, and perform actual operations to check whether the compensation amount is appropriate before deciding on the proper amount. If this amount is excessive, the pan/tilt head will start returning in the opposite direction as soon as it has been made to come to a standstill.

■ Adjusting the minimum start speed of the lens zoom

Perform this adjustment to ensure that the lens zoom will function smoothly in response to the angle to which the zoom lever is tilted when it is used to zoom the lens.

1. Press the MENU button, and turn the menu setting control (main) to display the P/T SETTING item on the top line of the LCD panel.

   ```
   P/T SETTING
            ➔ OK Key
   ```

2. Press the OK button. The following item appears on the LCD panel.

   ```
   PAN DIRECTION
                NORMAL
   ```

3. Turn the menu setting control (main) to display the Zoom Minimum SPD ADJ item on the top line of the LCD panel.

   ```
   Zoom Minimum SPD ADJ
                     0
   ```

4. Move the ZOOM lever slowly, and check the image on the monitor to verify whether the lens starts zooming smoothly.

5. If the lens does not start zooming smoothly, turn the menu setting control (R), and adjust in such a way that it does zoom smoothly.

■ Setting the travel range (limiters) of the pan/tilt head

Depending on where it has been installed, there may be obstacles within the travel range of the pan/tilt head system with which the system may come into contact.
The pan/tilt head system may malfunction or an accident may occur if the system comes into contact with such an obstacle.
Prior to use, be absolutely sure to set the travel range (limiters: upper, lower, left-most and right-most limits of rotation) of the pan/tilt head system.

Before installing a pan/tilt head as a stand-alone type, set the installation direction switch inside the pan/tilt head to stand-alone installation. (“Suspended installation” is the factory setting.)
If this switch is not set properly, the operating directions of the pan/tilt head will be reversed, and the limits of the pan/tilt head’s travel range (limiters) will not be stored in the memory properly. For details on how to set the switch, refer to the operating instructions of the pan/tilt head.

1. Select the pan/tilt head system using the CONTROL/ PREVIEW MONITOR OUT SEL button.

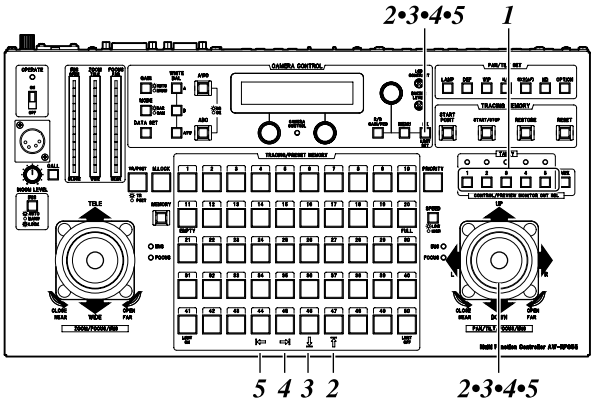
2. Set the upper limit position in the travel range.
   ① Operate the PAN/TILT lever on the control panel to rotate the camera to the position which is to serve as the upper limit position.
   ② While holding down the OK button on the control panel, press TRACING/PRESET MEMORY button 47⤒.
   ③ The setting is completed when the 41 [LIMIT ON] button’s lamp comes on.
   - To cancel the setting, press button 47⤒ while pressing the OK button again. When the setting is canceled, the 50 [LIMIT OFF] button’s lamp comes on.

3. Set the lower limit position in the travel range.
   ① Operate the PAN/TILT lever on the control panel to rotate the camera to the position which is to serve as the lower limit position.
   ② While holding down the OK button, press button 46⤓.
   ③ The setting is completed when the 41 [LIMIT ON] button’s lamp comes on.
   - To cancel the setting, press button 46⤓ while pressing the OK button again. When the setting is canceled, the 50 [LIMIT OFF] button’s lamp comes on.

4. Set the left-most limit position in the travel range.
   ① Operate the PAN/TILT lever on the control panel to rotate the camera to the position which is to serve as the left-most limit position.
   ② While holding down the OK button, press button 44 ⇤.
   ③ The setting is completed when the 41 [LIMIT ON] button's lamp comes on.
   - To cancel the setting, press button 44 ⇤ while pressing the OK button again. When the setting is canceled, the 50 [LIMIT OFF] button's lamp comes on.

5. Set the right-most limit position in the travel range.
   ① Operate the PAN/TILT lever on the control panel to rotate the camera to the position which is to serve as the right-most limit position.
   ② While holding down the OK button, press button 45 ⇥.
   ③ The setting is completed when the 41 [LIMIT ON] button's lamp comes on.
   - To cancel the setting, press button 45 ⇥ while pressing the OK button again. When the setting is canceled, the 50 [LIMIT OFF] button's lamp comes on.

6. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue setting the travel range (limiters) for each system concerned.



■ Genlock adjustment

If a camera is to be synchronized with an external signal for use, genlock adjustment must be performed for the camera and other equipments.
Either the black burst or VBS (video, burst and sync) signal is used for the external sync signal.
There is no need to perform the genlock adjustment if the camera is not going to be synchronized with an external signal.
For details on genlock adjustments, refer to the operating instructions of the camera and cable compensation unit.

Horizontal phase adjustment

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Connect the external synchronizing signal and the video signal from the currently selected pan/tilt head system (when using the cable compensation unit, the corresponding Y/VIDEO OUT terminal) to the 2CH oscilloscope.

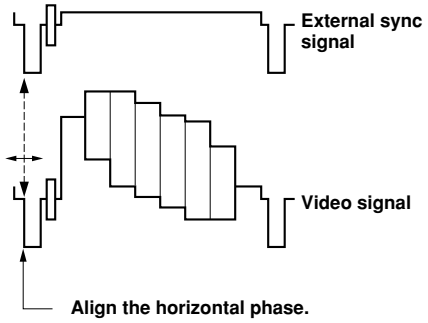
3. Press the MENU button, turn the menu setting control (main), and set it so that the G/L SETTING item appears at the top of the LCD panel.

```
G/L  SETTING
              ➔  OK  Key
```

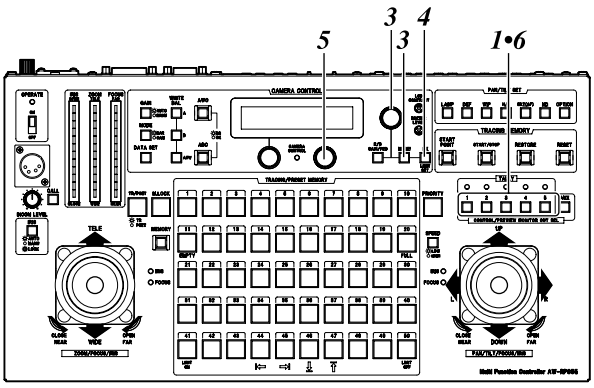
4. Press the OK button.
   The following item appears on the LCD panel.

```
H  PHASE
                    ±0
```

5. Using the menu setting control (R), align the horizontal phase of the video signal waveforms on the oscilloscope and external sync signal waveforms.



6. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the horizontal phase in each system concerned.



Subcarrier phase adjustment

The subcarrier phase adjustment must be performed, when composite signals have been set as the video input signals and the pictures are to be switched by a video switcher or other equipments.
This adjustment is not necessary when component signals have been set as the video input signals.

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Connect the video switcher to the video signal corresponding to the currently selected pan/tilt head system (when using the cable compensation unit, the corresponding Y/VIDEO OUT terminal) and the color monitor to the video switcher's video output terminal.

3. Press the MODE button to establish the BAR mode and switch the output signals from the convertible camera to color bar signals.

4. Press the MENU button, turn the menu setting control (main), and set it so that the G/L SETTING item appears at the top of the LCD panel.

```
G/L  SETTING
          ➔  OK  Key
```

5. Press the OK button.
   The following item appears on the LCD panel.

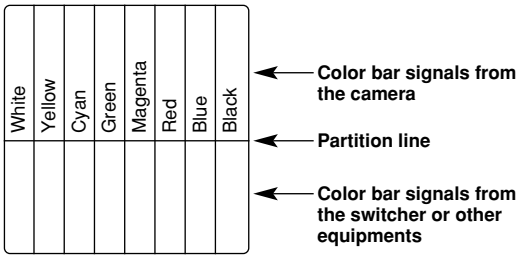
```
H  PHASE
              ±0
```

6. Turn the menu setting control (main), and set it so that the following item appears on the LCD panel.

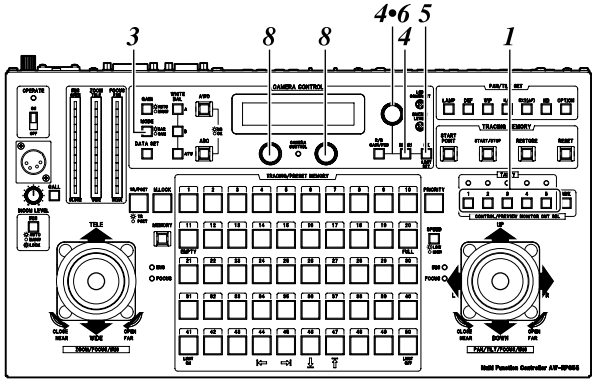
```
SC  PHASE
 COARSE:1   FINE:   ±0
```

7. Output both the color bar signals (signals from inside the switcher or other equipments) serving as the reference and the color bar signals from the camera to the color monitor.

8. Align the phase of the color bar signals from the camera with the phase of the color bar signals serving as the reference.
   Use the menu setting control (L) to adjust the phase in 90-degree increments and then the menu setting control (R) to make fine adjustments.

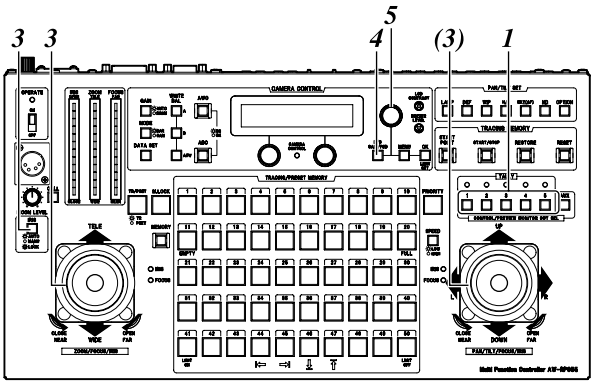


9. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the subcarrier phase in each system concerned.



■ Total pedestal adjustment

When more than one camera is to be used, the black level (pedestal level) of the pictures shot by each of the cameras must be brought into alignment.



1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Connect the wave form monitor to the video signal corresponding to the currently selected pan/tilt head system (when using the cable compensation unit, the corresponding Y/VIDEO OUT terminal).

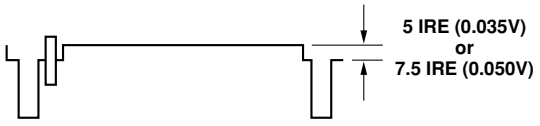
3. Press the IRIS button to establish the MANU mode (the IRIS button's lamp now goes off), and use the FOCUS/IRIS dial to close the lens iris.

4. Press the R/B GAIN/PED button, and set it so that the following item appears on the LCD panel.

   ```
   PEDESTAL  TOTAL  ±0
      R:  ±0       B:  ±0
   ```

5. Use the menu setting control (main) to adjust the black level to 5 IRE (0.035V) or 7.5 IRE (0.050V).

   The black level should be adjusted to the same level of equipments of the system.



6. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the black level for each system concerned.

■ White balance adjustment

The white balance must be adjusted when the equipment is used for the first time, when it has not been used for a prolonged time or when the lighting conditions or brightness has changed.
The white balance conditions can be entered in advance into channels A and B.
If the equipment is to be used under conditions which are identical to the entered settings, it means that no further adjustment need be undertaken since the white balance will be set simply by pressing the WHITE BAL A button or B button once the white balance has been adjusted.
When the white balance is adjusted again, the previously entered settings will be deleted and replaced by the new conditions.

Automatic adjustment of white balance

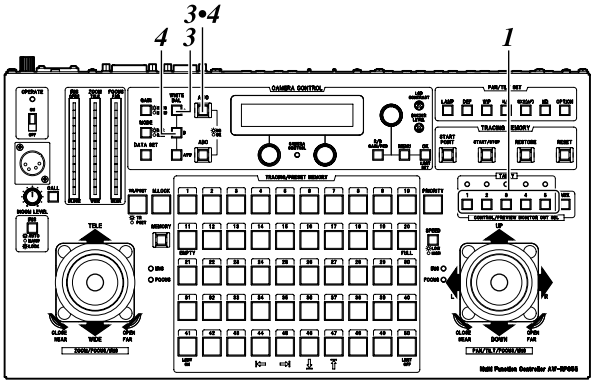
1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.
2. Shoot a white object (such as a white wall or handkerchief) to fill the whole screen using the pan/tilt head system currently selected.

   Do not allow shiny, reflective or very bright objects to appear on the screen.

3. Press the WHITE BAL A button, and press the AWC button. The AWC button's lamp flashes, and the white balance is automatically adjusted. Once the adjustment has been performed correctly, the lamp goes off, and the conditions set are entered in channel A.
   The AWC button's lamp will remain lighted if it was not possible for the adjustment to be performed. In this case, change the brightness, iris, object, light source, etc., and perform the adjustment again.

   The AWC button's lamp goes off even if the white balance adjustment was not performed correctly in cases where a pan/tilt head system other than the AW-PH350, AW-PH360 or AW-PH650 is being used.

4. Similarly, enter the conditions set for channel B using the WHITE BAL B button.
5. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the white balance in each system concerned.

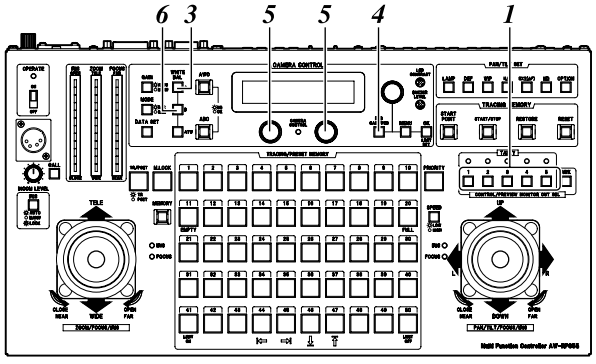


Manual adjustment of white balance

1. As with the procedure for automatic adjustment, select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and shoot a white object to fill the whole screen.
2. Connect a waveform monitor or color monitor to the VIDEO/Y OUT connector on the main unit that corresponds to the pan/tilt head system currently selected.
3. Press the WHITE BAL A button to select the channel A memory.
4. Press the R/G GAIN/PED button, and set it so that the following item appears on the LCD panel.

   ```
   GAIN                    0dB
      R:  ±0        B:  ±0
   ```

5. Use the menu setting control (L) to adjust the gain of the R (red) channel, and use the menu setting control (R) to adjust the gain of the B (blue) channel.
6. Similarly, enter the conditions set for channel B using the WHITE BAL B button.
7. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the white balance in each system concerned.



Automatic tracing white balance (ATW)

When the WHITE BAL ATW button is pressed during shooting, the ATW button's lamp comes on, compensation is provided so that the white balance will be automatically adjusted even if the light source or color temperature has changed in order to minimize an unnatural appearance in the resulting images.

If nothing white is shown on the screen, it may not be possible for the white balance to be compensated properly.
Similarly, with some light sources or color temperatures, it may not be possible for the white balance to be compensated properly.

■ Black balance adjustment

The black balance must be adjusted when the equipment is used for the first time, when it has not been used for a prolonged time, when the ambient temperature has changed significantly or when one season gives way to another.
If the equipment is to be used under conditions which are identical to the entered settings, no further adjustments are necessary.
When the black balance is adjusted again, the previously entered settings will be deleted and replaced by the new conditions.

Automatic adjustment of black balance

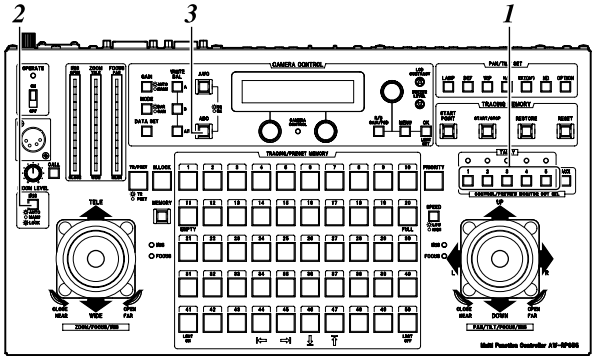
1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Press the IRIS button to set the currently selected pan/tilt head system to the AUTO mode (the IRIS button's lamp now comes on).

3. Press the ABC button. The ABC button's lamp flashes, the lens iris is automatically stopped down, and the black balance is automatically adjusted. Once the adjustment has been performed correctly, the lamp goes off, and the conditions set are entered in the memory.
   The ABC button's lamp will remain lighted if it was not possible for the adjustment to be performed. In this case, repeat the adjustment procedure.

   - It may not be possible to adjust the black balance if the total pedestal is too low. In this case, adjust the total pedestal again, and then repeat the black balance adjustment.
   - The ABC button's lamp goes off even if the black balance adjustment was not performed correctly in cases where a pan/tilt head system other than the AW-PH350, AW-PH360 or AW-PH650 is being used.

4. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the black balance in each system concerned.



Manual adjustment of black balance

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Connect a waveform monitor or color monitor to the VIDEO/Y OUT connector on the main unit that corresponds to the pan/tilt head system currently selected.

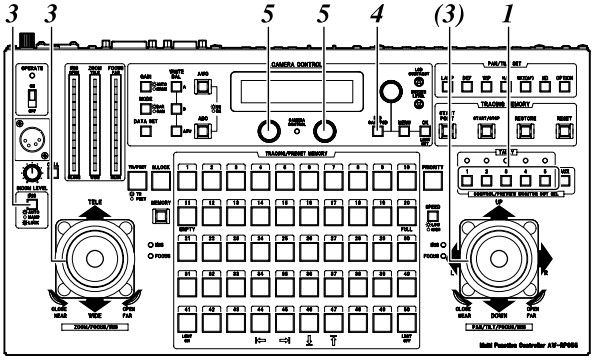
3. Press the IRIS button to establish the MANU mode (the IRIS button's lamp now goes off), and use the FOCUS/IRIS dial to close the lens iris.

4. Press the R/B GAIN/PED button, and set it so that the following item appears on the LCD panel.

   ```
   PEDESTAL  TOTAL  ±0
      R:  ±0        B:  ±0
   ```

5. Use the menu setting control (L) to adjust the pedestal of the R (red) channel, and use the menu setting control (R) to adjust the pedestal of the B (blue) channel.

6. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue adjusting the black balance in each system concerned.



■ Tracing memory settings

The multi-function controller is equipped with a tracing memory function for entering the series of settings with which pan/tilt head systems is operated.
The tracing memories are entered into TRACING/PRESET MEMORY buttons 1 through 10.

Setting the entry time (memory length) and number of memories

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Press the MENU button, and turn the menu setting control (main), and set it so that the CONTROLLER SETTING item appears at the top of the LCD panel.

```
CONTROLLER SETTING
          ➔ OK Key
```

3. Press the OK button.
   The following item appears on the LCD panel.

```
BUZZER SET
                ON
```

4. Turn the menu setting control (main), and set it so that the following item appears on the LCD panel.

```
MEMORY LENGTH SELECT
                30s
```

5. Set the tracing memory entry time (memory length) and number of memories using the menu setting control (R).

   30s: 30 seconds × 10 memories (buttons 1 through 10)
   60s: 60 seconds × 5 memories (buttons 1 through 5)
   150s: 150 seconds × 2 memories (buttons 1 and 2)
   300s: 300 seconds × 1 memory (button 1)

```
MEMORY LENGTH SELECT
                30s
```

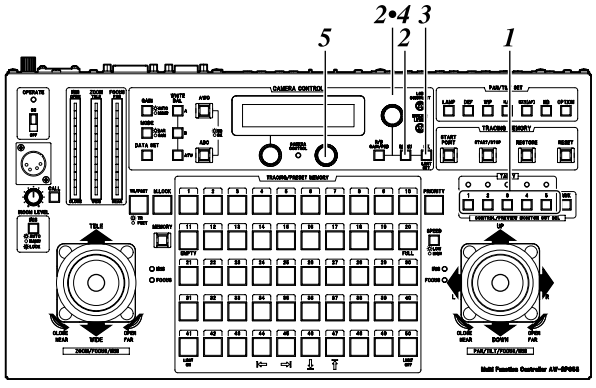
```
MEMORY LENGTH SELECT
                60s
```

```
MEMORY LENGTH SELECT
               150s
```

```
MEMORY LENGTH SELECT
               300s
```

- If data has already been entered into a tracing memory, the entry time and number of memories cannot be set. Before entering different settings, delete the contents of the tracing memory, and then proceed.
- Once entry times and numbers of memories have been set, the settings cannot be changed for any of the buttons unless memories are deleted.

6. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue setting the entry times and number of memories for each system concerned.



Entering the tracing memory data

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Use the following buttons to establish the modes.
   - Press the IRIS button to establish the MANU mode (the IRIS button's lamp now goes off).
     If the AUTO mode is established, the lens iris position will not be entered.
   - Press the TR/PSET button to establish the tracing memory mode (the TR/PSET button's lamp now comes on).
   - If the M.LOCK button's lamp lights, press the M.LOCK button to establish the memory entry mode (the M.LOCK button's lamp now goes off).

3. Operate the ZOOM lever and PAN/TILT lever, and on the monitor now check the pictures which are to be shot.

4. Select the white balance from among the A, B and ATW buttons, and adjust the lens iris using the FOCUS/IRIS dial.

5. Press the START POINT button.
   The lamps of those buttons among TRACING/PRESET MEMORY buttons 1 through 10 in which data can be entered now come on.

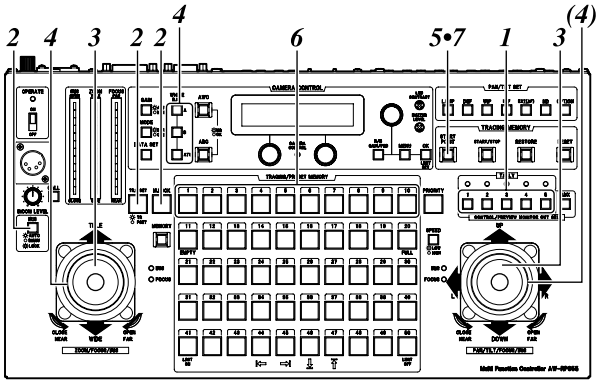
   If any button's lamp remains off, it means that data has already been entered into that button. To enter data into a button whose lamp is off, delete the data in the memory first, and then proceed.

6. Press the button into which data is to be entered.
   Only the lamp of the button which was pressed comes on, and the data is entered as the start position of the tracing memory.

   If the PAN/TILT lever is now operated, the entry mode will be canceled.

7. Press the START/STOP button.
   The START/STOP button's lamp flashes, and the entry standby mode is established.

   When the START/STOP button is now pressed, the entry mode will be canceled.



8. The entry in the tracing memory commences as soon as the pan, tilt, zoom, focus, iris or white balance mode selection is initiated so proceed with the entry operation.
   The START/STOP button stops flashing and comes on, and the lamps of TRACING/PRESET MEMORY buttons 11 through 30 come on to provide a general guideline of the time for which data can be entered.
   Each of the No. 11 through No. 20 buttons indicates a time of approximately 3 seconds; and each of the No. 21 through No. 30 buttons indicates a time of approximately 30 seconds.
   The lamps of buttons No. 20 and above go off approximately every 3 seconds to indicate the remaining time during which data can be entered in the memories.
   As soon as the lamp in button No. 11 goes off, the buzzer sounds, and the tracing memory entry is completed.

   - Press the START/STOP button to suspend the tracing memory entry at any time. The operations performed up until the entry was stopped are entered as the tracing memory data.
   - The buzzer sounds when tracing memory entry is started or suspended and when data entry is completed.

9. If necessary, enter the other operations into TRACING/PRESET MEMORY buttons 1 through 10 as tracing memory data.

10. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue setting the tracing memory data for each system concerned.

Example of remaining time display

■ : Indicates that a button's lamp is lighted.

21 seconds

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

45 seconds

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

When data has been entered into the tracing memories, the data will also be saved in the pan/tilt head's memories. Therefore, when the pan/tilt head has been replaced with another head, enter the data into the tracing memories of the head now in use.

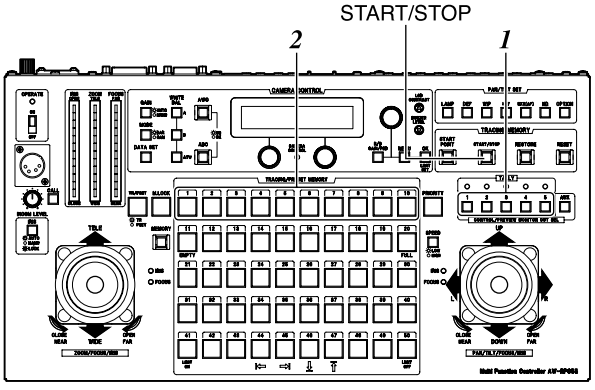
Recalling tracing memory data

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Press the button in which the tracing memory data to be recalled has been entered.
   The pan/tilt head system is set to the start position entered in the tracing memory.

3. After the pan/tilt head system has been set to the tracing memory start position status and then stopped, press the button in which the tracing memory data has been entered again.
   The pan/tilt head system now starts the operations entered in the tracing memory.

- When the AW-PH350, AW-PH360 or AW-PH650 is used as the pan/tilt head, no operations will be acknowledged even if the button in which the tracing memory data has been entered is pressed before the head is set to the start position status. When using a pan/tilt head other than the AW-PH350, AW-PH360 or the AW-PH650, the tracing operation will again be performed from the position where the button is pressed if the button in which the tracing memory data has been entered is pressed before the head is set to the start position status. Therefore, the button in which the tracing memory data has been entered must be pressed after the pan/tilt head system has been set to the tracing memory start position status and stopped.
- Press the START/STOP button to suspend the recall of the data from tracing memory at any time. This recall can also be suspended as soon as the pan, tilt, zoom or focus operation has been initiated.
- The buzzer sounds when tracing memory data recall is started or suspended and when the data recall is completed.



Making changes to the tracing memory

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Press the button in which the tracing memory data to be changed has been entered, and call the start position of the tracing memory.

3. Press the RESTORE button.
   The RESTORE button's lamp flashes, and the start position setting of the tracing memory can be changed.

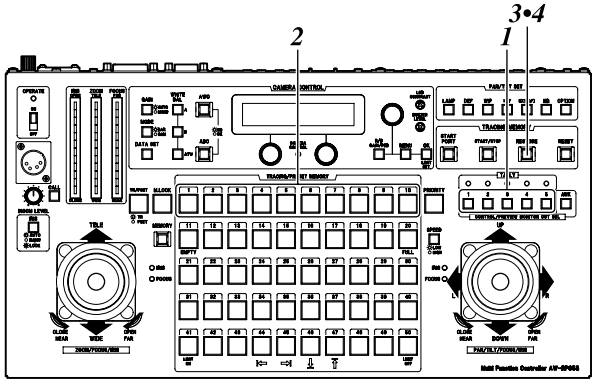
   The change mode is canceled if the START/STOP button is pressed at this point.

4. Press the RESTORE button again.
   The pan/tilt head system starts performing the operations entered in the tracing memory, and the RESTORE button's lamp stops flashing and comes on. As with the data entry process, buttons No. 11 through No. 30 serve as a general guideline for the time.

5. The tracing memory operations are changed.

   Partial changes cannot be made to tracing memory operations. Enter all the operations again starting from the point where the change is made.

6. As soon as the lamp in button No. 11 goes off, the buzzer sounds, and the tracing memory change is completed.



Deleting tracing memory data

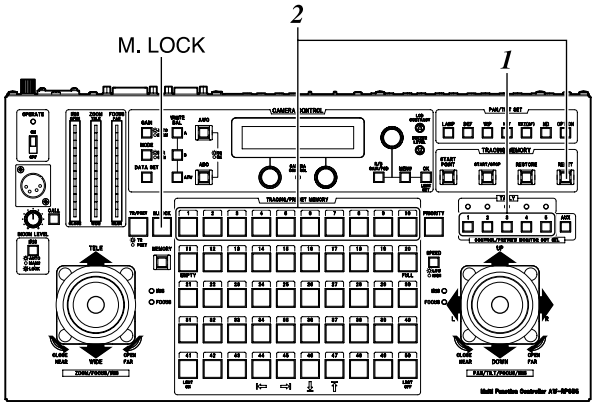
1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. While holding down the RESET button, press the buttons in which the tracing memory data to be deleted has been entered.

   The lamps of the buttons in which tracing memory data has been entered (TRACING/PRESET MEMORY buttons 1 through 10) come on when the RESET button is pressed.

3. The buttons' lamps go off, and the tracing memory data is deleted.

   Data cannot be deleted while the M.LOCK button's lamp is lighted.



■ Preset memory settings

The multi-function controller is equipped with a preset memory function for entering the positions and settings with which the pan/tilt head system is to shoot.
Preset memory data is entered into TRACING/PRESET MEMORY buttons 1 through 50.

Entering preset memory data

1. Select the pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button.

2. Connect a color monitor to the VIDEO/Y OUT connector on the main unit that corresponds to the pan/tilt head system currently selected.

3. Use the following buttons to establish the modes.
   - Press the IRIS button to establish the MANU mode (the IRIS button's lamp now goes off).
     If the AUTO mode is established, the lens iris position will not be entered.
   - Press the TR/PSET button to establish the preset memory mode (the TR/PSET button's lamp now goes off).
   - If the M.LOCK button's lamp lights, press the M.LOCK button to establish the memory entry mode (the M.LOCK button's lamp now goes off).

4. Operate the ZOOM lever and PAN/TILT lever, and on the monitor check the pictures which are to be shot.

5. Select the white balance from among the A, B and ATW buttons, and adjust the lens iris using the FOCUS/IRIS dial.

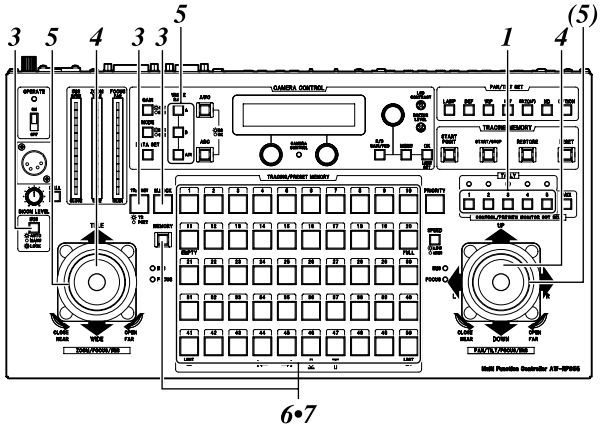
6. Set the unit to a state in which the MEMORY button is held down.
   When the MEMORY button is pressed, those buttons among the TRACING/PRESET MEMORY buttons 1 through 50 in which data can be entered start flashing in sequence.

   If a button has a lamp that remains off, it means that data has already been entered into it. Preset memory data cannot be entered into it.

7. While the MEMORY button is held down, press the button in which the preset memory data is to be entered.

8. If necessary, enter other shooting positions and settings into other buttons among TRACING/PRESET MEMORY buttons 1 through 50 as preset memory data.

9. Select the next pan/tilt head system using the CONTROL/PREVIEW MONITOR OUT SEL button, and continue setting the preset memory data for each system concerned.



Setting menus

G/L SETTING

⩥ H PHASE	[– 0]
⩥ SC PHASE	[COARSE: 1, FINE: – 0]

With the COARSE setting, it is not possible to switch the speed at which the setting value changes when the menu setting control is pressed.

CONTROLLER SETTING

BUZZER SET	[ON]
EXT CONTROL OUT	[OFF]
MEMORY LENGTH	[30s]
HEAD SW (R) FUNCTION	[OFF]
VIRTUAL STUDIO MODE	[OFF]
Camera Model Select	[CAM1=No Camera (CAM2 - CAM5=No Camera)]

P/T SETTING

PAN DIRECTION	[NORMAL]
TILT DIRECTION	[NORMAL]
ZOOM DIRECTION	[NORMAL]
FOCUS DIRECTION	[NORMAL]
IRIS DIRECTION	[NORMAL]
SPEED SELECT (PAN)	[HIGH: FAST, LOW: FAST]
SPEED SELECT (TILT)	[HIGH: FAST, LOW: FAST]
SPEED SELECT (ZOOM)	[HIGH: FAST, LOW: FAST]
SPEED SELECT (FOCUS)	[HIGH: FAST, LOW: FAST]
SPEED WITH ZOOM POS.	[OFF]
DIAGONAL MOTION	[OFF]
DIAGONAL SPEED	[30]
PAN/TILT MIN SPD Set	
Backlash Supplement	[PAN=OFF (TILT =OFF, PAN=1, TILT=1)]
Zoom Minimum SPD ADJ	[0]

- The factory settings are indicated in parentheses.
- It is possible to switch the speed at which the setting value of the items marked with ⩥ changes each time the menu setting control is pressed.

Setting menus *(AW-E300/AW-E300A/AW-E600/AW-E800A)*

CAMERA SETTING

SCENE [USER]

USER

SHUTTER	[OFF]
DETAIL	[HIGH]
⩥ PICTURE LEVEL	[± 0]
⩥ LIGHT PEAK/AVG	[0]
LIGHT AREA	[TOP CUT]
⩥ S/S FREQUENCY	[60.34 Hz]
CHROMA LEVEL	[± 0]
HIGH LIGHT CHROMA	[OFF]
COLOR BAR SET	[7.5 IRE]
DETAIL FLESH TONE	[MID]
NEGA/POSI	[POSI]
CLEAN DNR	[OFF]
ASPECT RATIO	[16:9]
FAN	[ON]
ATW SPEED	[MIDDLE]
FIELD/FRAME	[FIELD]
2D LPF	[OFF]
H DETAIL LEVEL H	[+24] ※
V DETAIL LEVEL H	[+7] ※
H DETAIL LEVEL L	[+12] ※
V DETAIL LEVEL L	[+4] ※
DETAIL BAND	[5] ※
NOISE SUPPRESS	[0]
LEVEL DEPENDENT	[0%]
DARK DETAIL	[0]
CHROMA DETAIL	[0]
CORNER DETAIL	[OFF]
PRECISION DETAIL	[OFF]
⩥ MATRIX (R-G)	[± 0]
⩥ MATRIX (R-B)	[± 0]
⩥ MATRIX (G-R)	[± 0]
⩥ MATRIX (G-B)	[± 0]
⩥ MATRIX (B-R)	[± 0]
⩥ MATRIX (B-G)	[± 0]
GAMMA	[0.45]
KNEE POINT	[88%]
WHITE CLIP	[110%]
⩥ FLARE R	[0]
⩥ FLARE G	[0]
⩥ FLARE B	[0]
BLACK STRETCH	[OFF]
ZEBRA INDICATOR	[OFF]
ZEBRA L LEVEL	[70%]
ZEBRA H LEVEL	[85%]
SAFETY ZONE	[1]
EVF OUTPUT	[Y]
COMPONENT	[Y/Pr/Pb]
CHARGE TIME	[AUTO]
AGC MAX LEVEL	[18 dB]

HALOGEN

SHUTTER	[OFF]
DETAIL	[HIGH]
⩥ PICTURE LEVEL	[± 0]
⩥ LIGHT PEAK/AVG	[0]
LIGHT AREA	[TOP CUT]
⩥ S/S FREQUENCY	[60.34 Hz]
CHROMA LEVEL	[± 0]
HIGH LIGHT CHROMA	[OFF]
COLOR BAR SET	[7.5 IRE]
DETAIL FLESH TONE	[MID]
NEGA/POSI	[POSI]
CLEAN DNR	[OFF]
ASPECT RATIO	[16:9]
FAN	[ON]
ATW SPEED	[MIDDLE]
CONTRAST (GAMMA)	[MID]
FLESH TONE	[± 0]
DETAIL SELECT	[NORMAL]
NOISE SUPPRESS	[OFF]
V RESOLUTION	[NORMAL]
ZEBRA INDICATOR	[OFF]
ZEBRA L LEVEL	[70%]
ZEBRA H LEVEL	[85%]
SAFETY ZONE	[1]
EVF OUTPUT	[Y]
COMPONENT	[Y/Pr/Pb]
CHARGE TIME	[AUTO]
AGC MAX LEVEL	[18 dB]

FLOURECENT

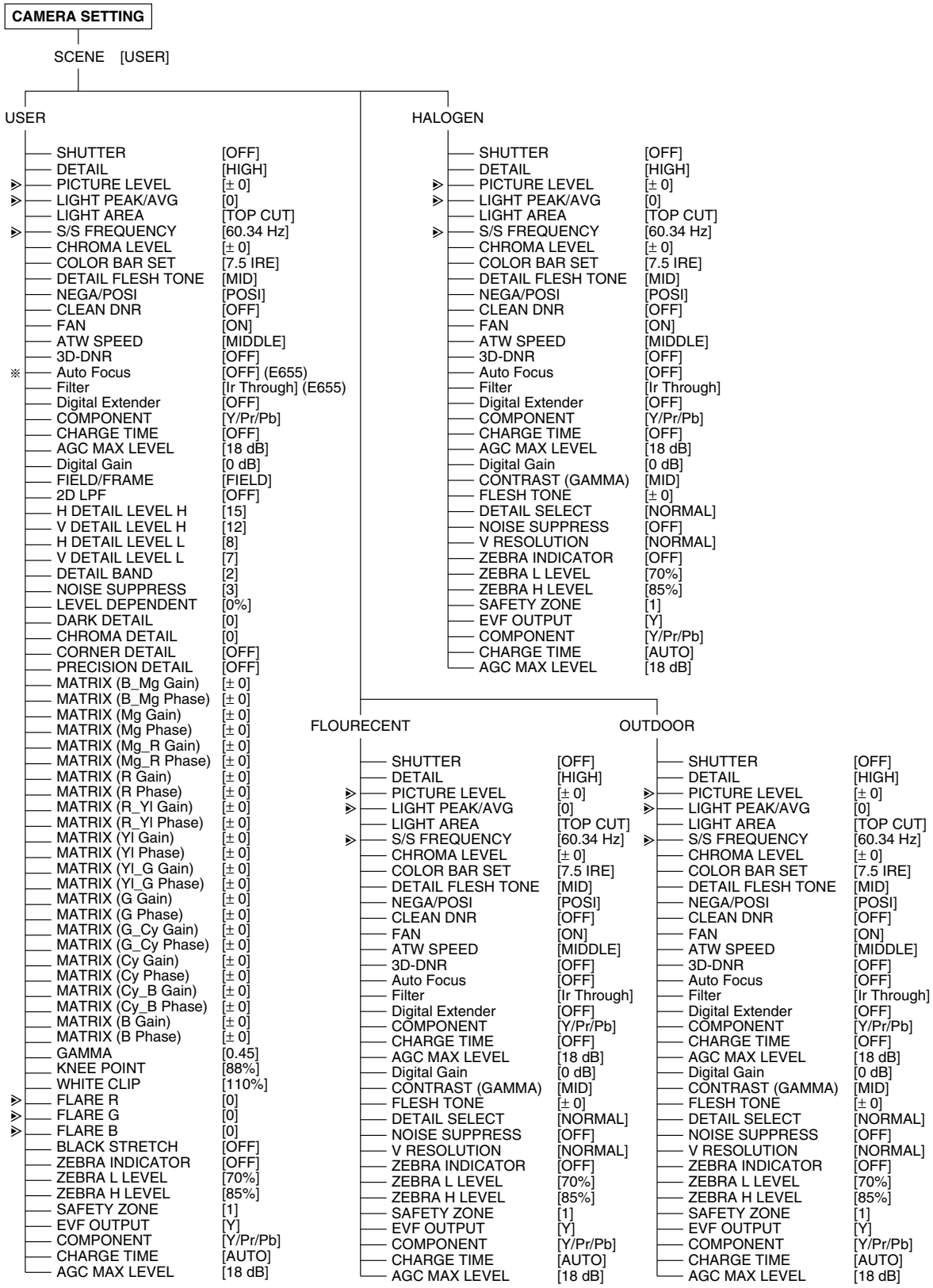
SHUTTER	[OFF]
DETAIL	[HIGH]
⩥ PICTURE LEVEL	[± 0]
⩥ LIGHT PEAK/AVG	[0]
LIGHT AREA	[TOP CUT]
⩥ S/S FREQUENCY	[60.34 Hz]
CHROMA LEVEL	[± 0]
HIGH LIGHT CHROMA	[OFF]
COLOR BAR SET	[7.5 IRE]
DETAIL FLESH TONE	[MID]
NEGA/POSI	[POSI]
CLEAN DNR	[OFF]
ASPECT RATIO	[16:9]
FAN	[ON]
ATW SPEED	[MIDDLE]
CONTRAST (GAMMA)	[MID]
FLESH TONE	[± 0]
DETAIL SELECT	[NORMAL]
NOISE SUPPRESS	[OFF]
V RESOLUTION	[NORMAL]
ZEBRA INDICATOR	[OFF]
ZEBRA L LEVEL	[70%]
ZEBRA H LEVEL	[85%]
SAFETY ZONE	[1]
EVF OUTPUT	[Y]
COMPONENT	[Y/Pr/Pb]
CHARGE TIME	[AUTO]
AGC MAX LEVEL	[18 dB]

OUTDOOR

SHUTTER	[OFF]
DETAIL	[HIGH]
⩥ PICTURE LEVEL	[± 0]
⩥ LIGHT PEAK/AVG	[0]
LIGHT AREA	[TOP CUT]
⩥ S/S FREQUENCY	[60.34 Hz]
CHROMA LEVEL	[± 0]
HIGH LIGHT CHROMA	[OFF]
COLOR BAR SET	[7.5 IRE]
DETAIL FLESH TONE	[MID]
NEGA/POSI	[POSI]
CLEAN DNR	[OFF]
ASPECT RATIO	[16:9]
FAN	[ON]
ATW SPEED	[MIDDLE]
CONTRAST (GAMMA)	[MID]
FLESH TONE	[± 0]
DETAIL SELECT	[NORMAL]
NOISE SUPPRESS	[OFF]
V RESOLUTION	[NORMAL]
ZEBRA INDICATOR	[OFF]
ZEBRA L LEVEL	[70%]
ZEBRA H LEVEL	[85%]
SAFETY ZONE	[1]
EVF OUTPUT	[Y]
COMPONENT	[Y/Pr/Pb]
CHARGE TIME	[AUTO]
AGC MAX LEVEL	[18 dB]

- The factory settings are indicated in parentheses.
- The setting values for items in parentheses with marked with an asterisk (※) are based on the AW-E800A being used as the camera.
  When a camera other than the AW-E800A is to be used, change the setting to the initial setting of that camera.
- It is possible to switch the speed at which the setting value of the items marked with ⩥ changes each time the menu setting control is pressed.

Setting menus *(AW-E350/AW-E650/AW-E655/AW-E750)*



- The factory settings are indicated in parentheses.
- It is possible to switch the speed at which the setting value of the items marked with ⩥ changes each time the menu setting control is pressed.

  ※ When connecting the AW-PH350, AW-PH360 or AW-PH650 pan/tilt head and using the lens with AF function (AW-LZ16AF7G), ON or OFF cannot be selected for this function using this menu item. To select ON or OFF, use the EXT (AF) button on the control panel instead (see page 8).

G/L SETTING (genlock adjustment) menu

H PHASE (–206 to +49)
This item is used to adjust the horizontal phase during genlock.

SC PHASE (1, 2, 3, 4, –511 to +511)
This item is used to adjust the color phase during genlock.

CONTROLLER SETTING (controller setting) menu

BUZZER SET (ON/OFF)
This is used to set the buzzer contained inside the control panel to ON or OFF. The buzzer does not sound when OFF is selected as this item's setting.
At the ON setting, the buzzer sounds when the CALL button is pressed and when a tracing memory operation (entry, recall or change) has been started, suspended or data entry has been completed.

EXT CONTROL OUT (ON/OFF)
When connecting the dial up adapter, it will be set to ON. Set to OFF during normal use.

COMPONENT (RGB, Y/Pr/Pb, Y/C)
This item is used to select the video signals which are to be output when the RGB card (AW-PB302) has been installed in the OPTION CARD slot.

MEMORY LENGTH (30s, 60s, 150s, 300s)
This item is used to set the tracing memory entry time (memory length) and number of memories.

30s : 30 seconds × 10 memories
60s : 60 seconds × 5 memories
150s : 150 seconds × 2 memories
300s : 300 seconds × 1 memory

If data has already been entered into a tracing memory, the entry time and number of memories cannot be set. Before entering different settings, delete the contents of the tracing memory.

HEAD SW (R) FUNCTION (ON/OFF)
When ON is selected as this item's setting, it is no longer possible to switch the adjustment dial functions (IRIS and FOCUS) using the button on the top surface of the PAN/TILT lever.
Since it is not supported at the present time, select the OFF setting for use.

VIRTUAL STUDIO MODE (ON/OFF)
When ON is selected as this item's setting, the camera's video signals are switched to the corrected color position for using the blue background of the virtual studio.

P/T SETTING (pan/tilt head setting) menu

PAN DIRECTION (NORMAL/REVERSE)
This item is used to select the operations in the horizontal direction of the pan/tilt head system which are to be performed by operating the PAN/TILT lever.
When NORMAL is selected as the setting, the pan/tilt head system moves toward the left when the PAN/TILT lever is tilted toward the L side, and it moves toward the right when it is tilted toward the R side.
Conversely, when REVERSE is selected as the setting, the pan/tilt head system moves in the reverse directions.

Always select REVERSE as the setting when using the AW-PH300 as the pan/tilt head system in the stand-alone installation. In this case, when REVERSE is selected as the setting, the pan/tilt head system moves toward the left when the PAN/TILT lever is tilted toward the L side, and it moves toward the right when it is tilted toward the R side. Conversely, when NORMAL is selected as the setting, the pan/tilt head system moves in the reverse directions.

TILT DIRECTION (NORMAL/REVERSE)
This item is used to select the operations for the vertical direction of the pan/tilt head system which are to be performed by manipulating the PAN/TILT lever.
When NORMAL is selected, the pan/tilt head system moves upward when the PAN/TILT lever is tilted toward the UP side, and it moves downward when it is tilted toward the DOWN side.
Conversely, when REVERSE is selected, the pan/tilt head system moves in the reverse directions.

Always select REVERSE as the setting when using the AW-PH300 as the pan/tilt head system for suspended installation. In this case, when REVERSE is selected, the pan/tilt head system moves upward when the PAN/TILT lever is tilted toward the UP side, and it moves downward when it is tilted toward the DOWN side. Conversely, when NORMAL is selected, the pan/tilt head system moves in the reverse directions.

ZOOM DIRECTION (NORMAL/REVERSE)
This item is used to select the zoom movements of the lens which are to be performed by operating the ZOOM lever.
When NORMAL is selected as the setting, the zoom moves toward the telephoto side when the ZOOM lever is tilted toward the TELE side, and it moves toward the wide-angle side when it is tilted toward the WIDE side.
Conversely, when REVERSE is selected as the setting, the zoom moves in the reverse directions.

FOCUS DIRECTION (NORMAL/REVERSE)
This item is used to select the focus operations of the lens which are to be performed by operating the dials on the top of the PAN/TILT lever and ZOOM lever.
When NORMAL is selected, the focus moves toward the far-distance side when the dial is turned toward the FAR side, and it moves toward the near-distance side when it is turned toward the NEAR side.
Conversely, when REVERSE is selected as the setting, the focus moves in the reverse directions.

IRIS DIRECTION (NORMAL/REVERSE)
This item is used to select the focus operations of the lens which are to be performed by operating the dials on the top of the PAN/TILT lever and ZOOM lever.
When NORMAL is selected for the setting, turn the dial towards OPEN to open up the iris and towards CLOSE to close in the iris.
Conversely, when REVERSE is selected as the setting, the iris moves in the reverse directions.
As the focusing of some lenses moves in reverse, select the setting which best suits the operator.

SPEED SELECT (PAN)
(HIGH: SLOW/MID/FAST; LOW: SLOW/MID/FAST)
This item is used to select the speed at which the pan/tilt head system is to operate in the horizontal direction in response to operation of the PAN/TILT lever.
The speed can be set to SLOW, MID or FAST for the HIGH mode and also for the LOW mode which are switched using the SPEED button.

When 1 or 2 has been selected as the SPEED WITH ZOOM POS. item setting, switching between SLOW, MID and FAST is not possible.

SPEED SELECT (TILT)
(HIGH: SLOW/MID/FAST; LOW: SLOW/MID/FAST)
This item is used to select the speed at which the pan/tilt head system is to operate in the vertical direction in response to operation of the PAN/TILT lever.
The speed can be set to SLOW, MID or FAST for the HIGH mode and also for the LOW mode which are switched using the SPEED button.

When 1 or 2 has been selected as the SPEED WITH ZOOM POS. item setting, switching between SLOW, MID and FAST is not possible.

SPEED SELECT (ZOOM)
(HIGH: SLOW/MID/FAST; LOW: SLOW/MID/FAST)
This item is used to select the speed at which the lens is to perform zoom operations in response to operation of the ZOOM lever.
The speed can be set to SLOW, MID or FAST for the HIGH mode and also for the LOW mode which are switched using the SPEED button.

SPEED SELECT (FOCUS)
(HIGH: SLOW/MID/FAST; LOW: SLOW/MID/FAST)
This item is used to select the speed at which the lens is to perform the focusing operations in response to operation of the dials on the top of the PAN/TILT lever and ZOOM lever.
The speed can be set to SLOW, MID or FAST for the HIGH mode and also for the LOW mode which are switched using the SPEED button.

SPEED WITH ZOOM POS. (OFF, 1, 2)
When 1 or 2 is selected as this item's setting, the pan/tilt operation of the pan/tilt head system is slowed down so that the pan/tilt position will be more easily aligned when the lens zoom is at the wide-angle position.

DIAGONAL MOTION (ON/OFF)
OFF : The pan/tilt head system moves to the position set in the preset memory at maximum speed.
ON : The speed at which the pan/tilt head system moves is adjusted so that it will move to the position set in the preset memory in a straight line.
However, repeatability with the AW-PH350 pan/tilt head will be ±10´, resulting in lower stopping accuracy.

DIAGONAL SPEED (1 to 30)
This item is used to select the speed at which the pan/tilt head system is to operate when DIAGONAL MOTION item has been set to ON. The higher the value set, the faster the speed at which the pan/tilt head will operate.
When DIAGONAL MOTION item has been set to OFF, operational speed cannot be set.

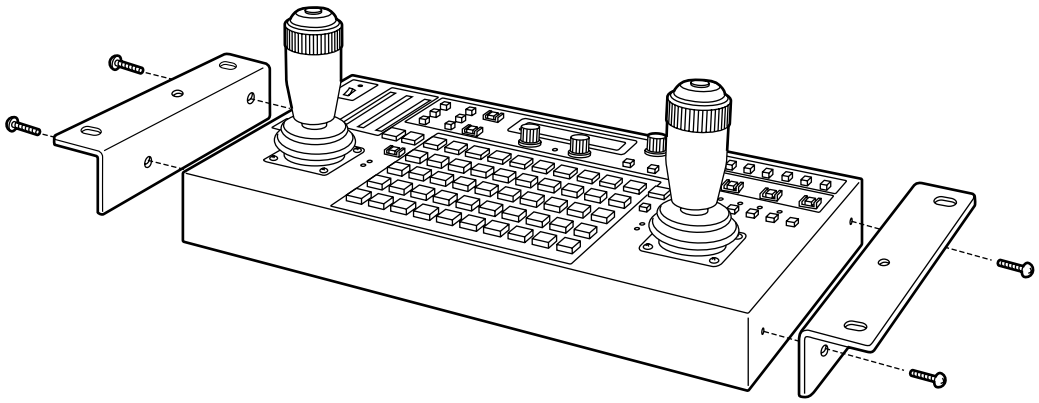
<Note>
The DIAGONAL MOTION and DIAGONAL SPEED items appear when the AW-PH350 is used as the pan/tilt head.

CAMERA SETTING menu

The operation items differ depending on the type of camera or pan/tilt head used and the optional card installed.
For further details, refer to the operating instructions of the camera used.

Attaching the rack mounting adapters

To install the main unit in a rack, use the rack mounting adapters and mounting screws (M4×8 mm) supplied.



Replacement of consumable parts

- **Battery replacement**

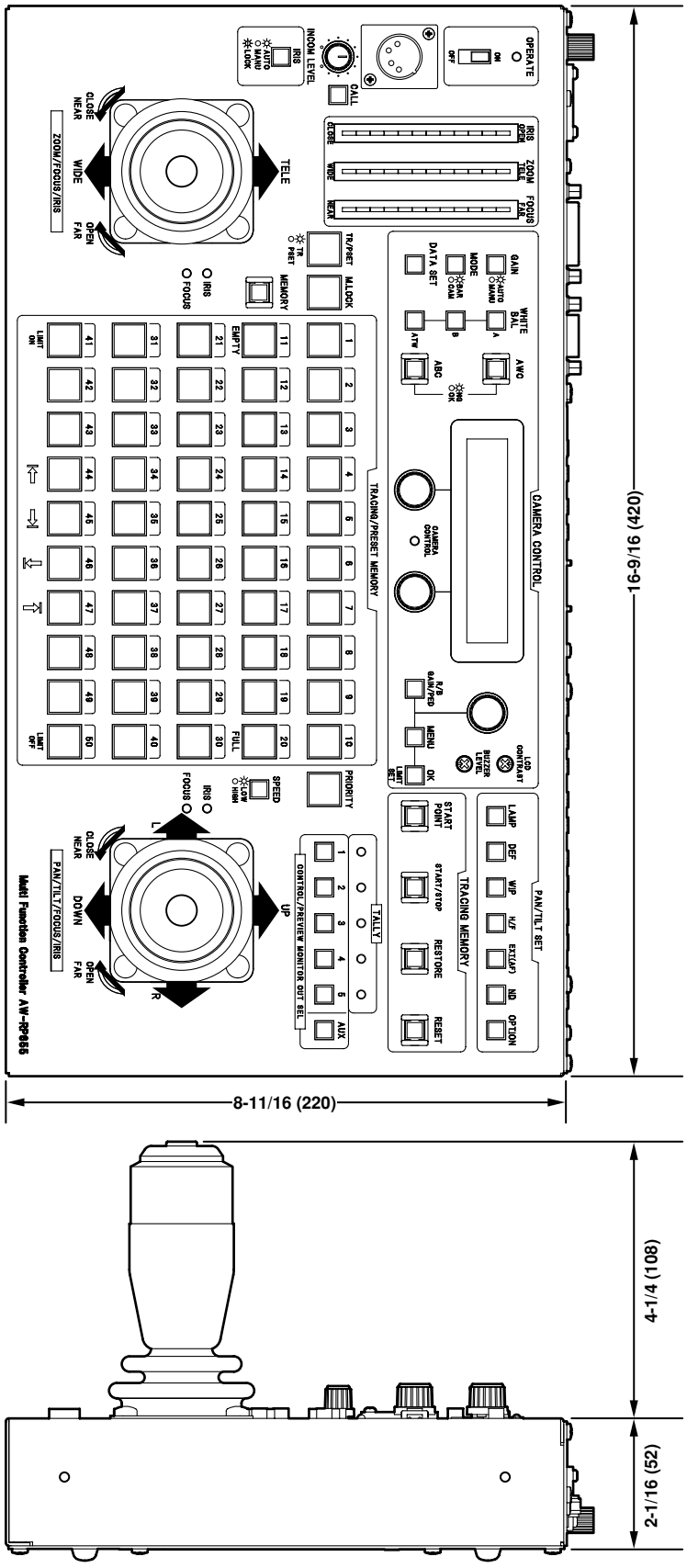
  The battery has a life of 5 years. Replace the battery within this period.
  Setting data such as that for the menu settings and tracing memories is stored in the Multi-Function Controller.
  This data is saved when the power is turned off under normal conditions; however, it will be lost if the power is turned off after the battery is exhausted.
  There is no need to replace the battery when operating in Panel Mode.
  Refer replacement of the battery to qualified service personnel.

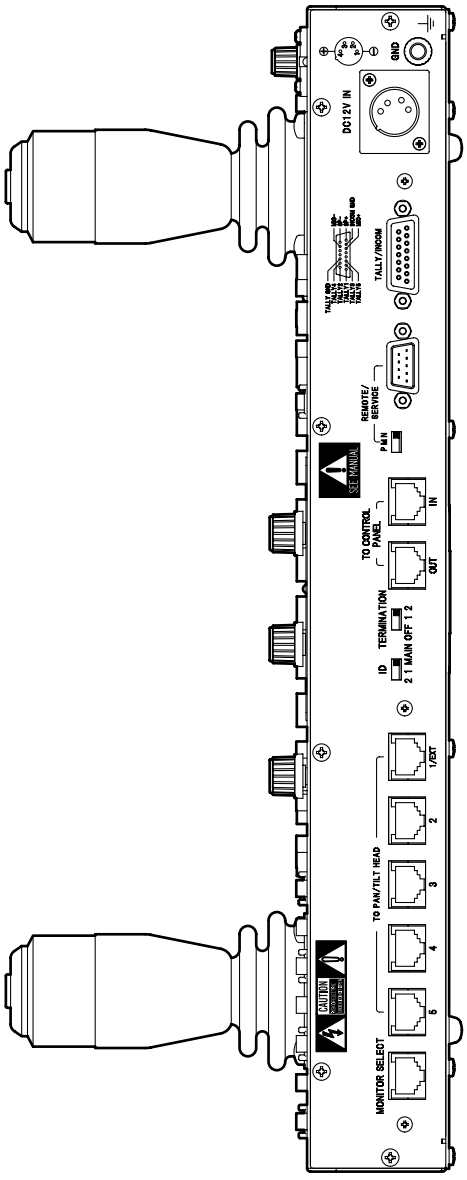
- **Joystick replacement**

  The joystick is a consumable part.
  Replace the joystick if operation is impeded.
  Refer replacement of the joystick to qualified service personnel

Appearance

Unit: inch (mm)





Specifications

Power supply: DC 10.8 V to DC 16 V
Power consumption: 9.0 W

▭ indicates safety information.

■ General

Ambient operating temperature
14°F to 122°F (–10°C to +50°C)

Storage temperature
–4°F to +140°F (–20°C to +60°C)

Ambient operating humidity
30% to 90% (no condensation)

Weight
7.48 lbs. (3.4 kg)

Dimensions (W × H × D)
16-9/16" × 2-1/16" × 8-11/16" (420 × 52 × 220 mm)

Pan/tilt heads supported
AW-PH300, AW-PH300A, AW-PH350, AW-PH360, AW-PH500, AW-PH600, AW-PH650

Cameras supported
AW-E300, AW-E300A, AW-E600, AW-E800, AW-E800A, AW-E350, AW-E650, AW-E655, AW-E750, AW-E860

■ Input connectors

DC 12V IN socket
XLR, 4 pins

TO CONTROL PANEL [IN/OUT] connectors
RJ45 (1 each)
Connecting cable:
10BASE-T straight cables (UTP category 5), max. 3,280 feet (1,000 meters)
When more than one control panel is to be connected to the main unit, make sure that the total length of all the cables does not exceed 3,280 feet (1,000 meters).

INCOM/TALLY
D-SUB, 15-pin

REMOTE/SERVICE
RS-232C

■ Output connectors

CONTROL OUT TO PAN/TILT HEAD [1/EXT2 to 5] connectors
RJ45 × 5, control signal output for pan/tilt heads
Connecting cable:
10BASE-T straight cables (UTP category 5), max. 3,280 feet (1,000 meters)

MONITOR SELECT connector
RJ45
Connecting cable:
10BASE-T straight cables (UTP category 5), max. 164 feet (50 meters)

■ Other

TERMINATION switch
Termination setting for communication line with control panel

ID switch
Operations mode (MAIN, 1, 2) setting.

REMOTE/SERVICE switch
Maintenance switch. Set in the N position during use.

■ Input/Output connectors

- TO CONTROL PANEL
- INCOM/TALLY
- REMOTE/SERVICE
- CONTROL OUT TO PAN/TILT HEAD

Panasonic®

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