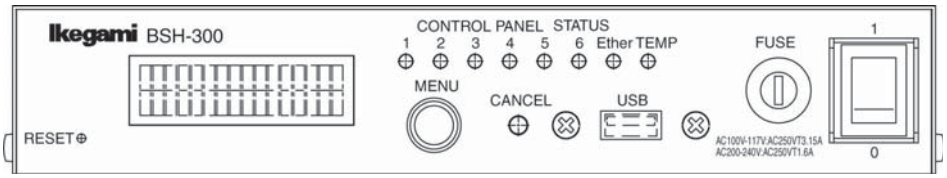
Products conforming to RoHS directive



BSH-300

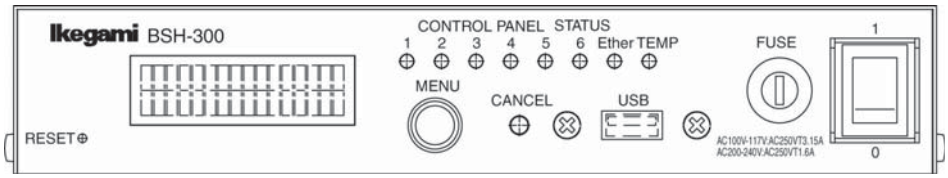
Ethernet/ICCP Converter

OPERATION MANUAL

Ikegami

CE

Products conforming to RoHS directive



BSH-300

Ethernet/ICCP Converter

OPERATION MANUAL

1405 2nd Edition (U) (E)

Ikegami

English

Instructions for Disposal of Electric and Electronic Equipment in Private Household

Disposal of used Electric and Electronic Equipment
(Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product, or in the related documents in the package, indicates that this product shall not be treated as normal household waste. Instead, it should be taken to a proper applicable collection point or depot for the recycling of electric and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent possible negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.
For more detailed information about recycling of this product, please contact your local city authority, your household waste disposal service or the place where you purchased the product.

Deutsch

Vorschriften für die Entsorgung von elektrischen und elektronischen Geräten in Privathaushalten

Entsorgung von gebrauchten elektrischen und elektronischen Geräten
(In der Europäischen Union und anderen europäischen Ländern mit separaten Sammelsystemen anwendbar.)

Das auf dem Produkt angebrachte Symbol, bzw. die Symbole in den in der Packung beiliegenden Dokumenten, weisen darauf hin, dass dieses Produkt nicht als normaler Haushaltsmüll behandelt werden darf. Es muss deshalb an einer dafür vorgesehenen Sammelstelle abgeliefert werden, in der das Recycling von elektrischen und elektronischen Geräten durchgeführt wird.

Durch die ordnungsgemäße Entsorgung dieses Produkts tragen Sie dazu bei, dass unsere Umwelt und unsere Gesundheit nicht durch unsachgemäße Entsorgung negativ beeinflusst wird. Mit dem Recycling von Materialien tragen wir zur Bewahrung der natürlichen Ressourcen bei.
Für nähere Informationen hinsichtlich des Recyclings für dieses Produkt sprechen Sie bitte mit Ihrer zuständigen Behörde, Ihrer Hausmüll-Entsorgungsstelle oder dem Geschäft, wo Sie das Produkt gekauft haben.

Français

Consignes de mise au rebut des appareils électriques et électroniques dans les foyers privés

Mise au rebut des appareils électriques et électroniques
(Applicable dans l'Union Européenne et autres pays d'Europe ayant un système de récupération séparé)

Ce symbole apposé sur le produit ou dans les documents liés se trouvant dans l'emballage indique que ce produit ne doit pas être traité comme un déchet ménager normal. Il doit être porté à un point de récupération correct ou à un dépôt pour le recyclage des appareils électriques et électroniques.

En vous assurant que ce produit est correctement mis au rebut, vous aiderez à empêcher les conséquences possibles pouvant affecter l'environnement et la santé humaine, pouvant être causées par une mauvaise manipulation des déchets de ce produit. Le recyclage des matériaux favorise la conservation des ressources naturelles.
Pour des informations plus détaillées concernant le recyclage de ce produit, veuillez contacter les autorités locales, votre service de mise au rebut des déchets ménagers ou le lieu d'achat de votre produit.

Español

Instrucciones para eliminar equipos eléctricos y electrónicos de una casa privada

Eliminación de equipos eléctricos y electrónicos usados
(Normas aplicables en la Unión Europea y en otros países europeos con diferentes sistemas de recogida)

Este símbolo en el producto, o en los documentos relacionados, indica que este producto no deberá ser tratado como un residuo doméstico normal. En cambio, deberá ser llevado a un punto o lugar donde los equipos eléctricos y electrónicos sean recogidos para ser reciclados.

Asegurándose de que este producto sea eliminado correctamente, usted ayudará a impedir las posibles consecuencias negativas sobre el medio ambiente y la salud humana que podrían ser causadas por el manejo inapropiado de este producto como residuo doméstico. El reciclado de los materiales ayudará a conservar los recursos naturales.
Para conocer una información más detallada acerca del reciclado de este producto, póngase en contacto con las autoridades de su localidad, con su servicio de recogida de residuos domésticos o con el comercio donde adquirió el producto.

PRODUCTS CONFORMING TO RoHS DIRECTIVE

Following products described in this manual are products conforming to RoHS directive.

•BSH-300 Ethernet/ICCP Converter

Products conforming to RoHS directive include products that do not contain specified hazardous substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) in electrical and electronic equipment excluding following exemption applications based on the EU directive (Directive2002/95/EC).

* About RoHS Directive

The RoHS directive stands for "the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment" and is one of environmental directives in Europe. This directive restricts the use of specified hazardous substances in electrical and electronic equipment.

● Applications exempted from RoHS directive compliance

Followings applications are permitted as exemptions from RoHS directive compliance.

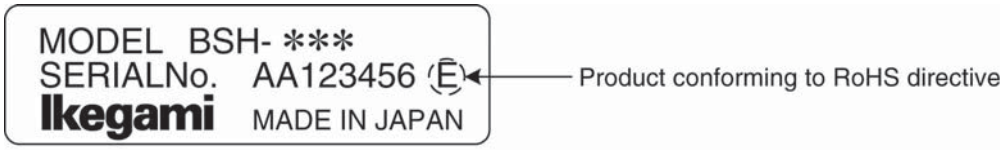
1. Mercury in compact fl uorescent lamps not exceeding 5mg per lamp
2. Mercury in straight fl uorescent lamps for general purposes not exceeding:
   - halophosphate 10mg
   - triphosphate with a normal lifetime 5mg
   - triphosphate with a long lifetime 8mg
3. Mercury in straight fl uorescent lamps for special purposes
4. Mercury in other lamps not specifically mentioned in this Annex
5. Lead in the glass of cathode ray tubes, electronic components and fl uorescent tubes
6. Lead as an alloying element in steel containing up to 0.35% lead by weight, aluminum containing up to 0.4% lead by weight and as a copper alloy containing up to 4% lead by weight
7. Lead in following items
   - Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85% lead)
   - Lead in solders for servers, storage and storage array systems
   - Lead in solders for network infrastructure equipment for switching, signaling, transmission as well as network management for telecommunication
   - Lead in electronic ceramic parts (e.g. piezoelectronic devices)
8. Cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations
9. Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators
10. Lead used in compliant pin connector systems
11. Lead as a coating material for the thermal conduction module C-ring
12. Lead and cadmium in optical and fi lter glass
13. Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight
14. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages
15. Decabrominated diphenyl ether (Deca-BDE) in polymeric applications

MAINTENANCE OF PRODUCTS CONFORMING TO RoHS DIRECTIVE

Work with care about followings for maintenance of products conforming to RoHS directive.

1. Identification

· For products conforming to RoHS directive, the letter “E” is appended at the end of the serial number on the label. For models that the letter cannot be appended to the serial number, the letter “E” will be described in a distinguishable position on the label. A description example on a main label is shown below.



Label

· Print-circuit board of the products conforming to RoHS directive is manufactured by following methods.

[1] Blue resist ink is used for the print-circuit board. (The color of conventional print-circuit board is green.)

[2] Either one of the following marks is indicated by a serigraph or label.

Phase 3A Phase 3

2. Soldering

Since the melting point of lead-free solder used for the products conforming to RoHS directive is 20 to 45 degrees Celsius higher than that of conventional solder with lead (Sn-Pb eutectic solder), a high temperature needs to be set to a soldering iron. Taking allowable temperature limit of the parts and stable work into consideration, use a soldering iron with excellent thermal recovery characteristics.

· Recommended solder composition is “Sn/3.0Ag/0.5Cu” or equivalent.

· Separate the soldering iron exclusively for RoHS products and the soldering iron for conventional use.

· Set the temperature of the soldering bit to 350 to 370 degrees Celsius.
The temperature may need to be adjusted according to the size of the copper foil land on the print-circuit board and the tip width of the soldering bit.

· Finish by a lead-free solder looks dull or whitish compared to conventional solder with lead.

3. Parts

Be sure to use parts conforming to RoHS directive.

INFORMATION TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, 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.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The CE mark means that the following products will meet the Directives 2004/108/EC、2006/95/EC and Standards EN55103-1,EN55103- 2(for the Electromagnetic environment E4-E5), EN60950-1.
.

Use shielded cable except AC cable.
This equipment doesn't intend to use at residential areas, so that use in residential areas may cause interference.

The Ethernet cable, please use a shielded cable always.

Please attach a core to a cable to connect to a connector of OCP/CCP, BS/CCU, SYSTEM, PREVIEW by all means.
Please make an inquiry to us about the installation of the core, if necessary.

For PLUGGABLE EQUIPMENT , the socket-outlet shell be installed near the equipment and shall be easily accessible.
This product is also designed for IT power distribution system with phase-to-phase voltage 230V.

SAFETY PRECAUTIONS

This manual describes the precautions using various pictorial symbols for you to use the product safely. Please read these precautions thoroughly before use. The symbols and meanings are as follows:

The following hazard alert symbols are used to indicate the level of impact on the body or property when you do not follow the precautions.

⚠ **WARNING**	Indicates that mishandling of the product by ignoring this label may lead to a danger resulting in a serious injury or death.
⚠ **CAUTION**	Indicates that mishandling of the product by ignoring this label may lead to a danger resulting in an injury or property damage.

The following symbols are used to indicate the expected injury or hazards when you do not follow the precautions.

	Indicates general cautions on such matters as safe work, procedure, and installation location. Mishandling may not directly lead to death, injury, or property damage.
	Indicates that mishandling may cause an electric shock.
	Indicates that mishandling may cause a fire.
	Indicates that mishandling may cause injury.

The following symbol is used to indicate other precautions to prevent damage or hazard from occurring:

	Indicates prohibited action.

■ *Handling Precautions*

⚠ WARNING

Regarding the Product

Do not disassemble or modify the product which is not described in this manual. Doing so may cause fire, electric shock, or injury.

Regarding the Power

When you disconnect the cable, be sure to hold the plug and pull. Failure to do so may cause a fire or electric shock due to a damaged cable.

To inspect or operate on the inside of the equipment, turn off the power and wait for one or two minutes before starting work. High voltage is present in some modules and connectors of this product.

⚠ CAUTION

Regarding the Product

Avoid use or storage in the following conditions:
- Extremely high/low temperature
- In direct sunlight for a long time, or near a heater
- High humidity or dusty
- Exposed to water or other liquid
- Strong vibration or shock
- Strong magneticfield or radio waves
- lightning
- In rain without the rain cover

Be sure to hold the plug and pull when you disconnect the cable.
Failure to do so may cause a fire or electric shock due to a broken cable.

Avoid moving the equipment suddenly from an extremely cold place to a warm place.
Condensation may occur in the Charged Couple Device (CCD) or other parts.

Do not drop or insert a metal object such as a pin or a foreign object into the equipment.

Do not spread or spill water or other liquid on the equipment.

Do not subject the equipment to a strong shock or vibration.
Doing so may cause damage or malfunction of the equipment.

Regarding the Modules

Pay attention to the following points when handling the modules:
- Do not let the parts of the modules or the printed wiring pattern to touch the metal parts that can be energized.
- Avoid placing or storing the modules in humid places.
- Do not touch the parts of the modules or the printed wiring pattern with dirty or wet hands. Do not touch them with hands unless necessary.

Regarding the Power and the Lithium Battery

Use the product in compliance with the rating of the fuse. Otherwise, a fault can occur.

Do not use an unspecified battery.
Wrong usage of batteries may cause liquid leak, explosion, and heat, and at worst injury or fire.
When changing or discarding a battery, please contact Ikegami's sales and service centers.

■ *Maintenance*

Regarding the product

Before performing maintenance on the product, be sure to turn off the power for safety and for protection against malfunction.

Clean the product using a dry and soft cloth.

If the stain is hard, soak the cloth with water or detergent, wring well and wipe. If you use detergent, wipe off the detergent with a cloth that is soaked in just water and wrung well.

■ *Regular Maintenance Recommended*

This product includes parts that wear out and have a limited life even in proper use or storage. Therefore, regular maintenance (once every 3 years or 8000 hours use) is recommended to extend the life and safe use of this product for a long time. Please contact Ikegami's sales and service centers or Techno Ikegami Co., Ltd. for the regular maintenance and repair of our products.

HOW TO READ THE OPERATION MANUAL

This page explains general notes on reading the BSH-300 Operation Manual, and the symbols and notations used in the manual.

■ *Notes on the Manual*

- This manual is written for readers with a basic knowledge of handling a broadcast camera, CCU, etc.
- The contents of this manual are subject to change without notice in the future.

■ *Symbols*

The symbols used in this manual are as follows.

CAUTION:	Things you have to be careful during operation. Be sure to read.
Note:	Supplementary information or guidance
Reference:	Sections where related information is available

■ *Notations*

The following notations are used in this manual.

This product, BSH	Indicates BSH-300 Ethernet/ICCP Converter
Camera head	Indicates general broadcast cameras.
Camera	In this manual stands for both Camera Head and BS/CCU against Control Panel.

■ *Illustrations and Displays*

The illustrations and displays in the text are provided for explanation and may be slightly different from the actual equipment or image.

■ *Related Manuals*

Refer to the operation manuals and maintenance manuals accompanying the camera head, CCU, and each control panel to be used.

BSH-300
Ethernet/ICCP Converter
Operation Manual
Contents

1 Overview

1.1 Overview

BSH-300 is a converter that enables the conventional device that is compatible with Ikegami command system to communicate via Ethernet, and also serves as a network hub that connects to a camera head, BS/CCU and control panels that are not compatible with Ethernet.

1.2 Features

There are the following three types of BSH-300 depending on the application.

1) A-Type

- Supports six control panels.

  Up to six control panels that are not compatible with Ethernet can be connected. The conventional CP cable is used for the connection. The additional power supply unit such as AC pack is not necessary as the power (DC+12V) is supplied via CP cable.

2) B-Type

- Supports six BS/CCUs.

  Up to six BS/CCUs that are not compatible with Ethernet can be connected.

3) C-Type

- Supports one MCP and two OCPs.

  Up to one MCP and two OCPs that are not compatible with Ethernet can be connected. The conventional MCP cable is used for the connection of MCP, and the conventional CP cable is used for the connection of OCP. The additional power supply unit such as AC pack is not necessary as the power (DC+12V) is supplied via MCP cable or CP cable.

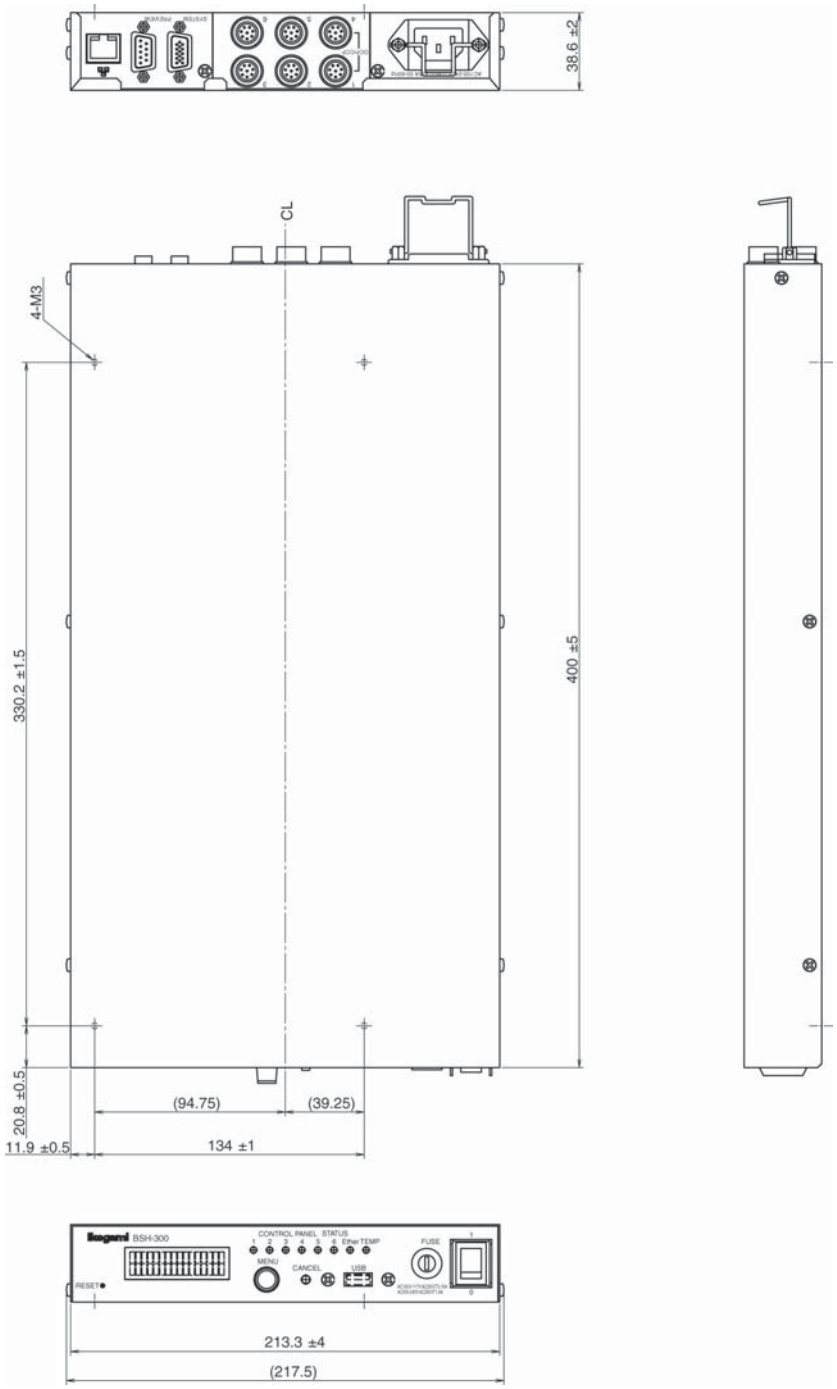
4) Common features among three types

- Equipped with a preview control output

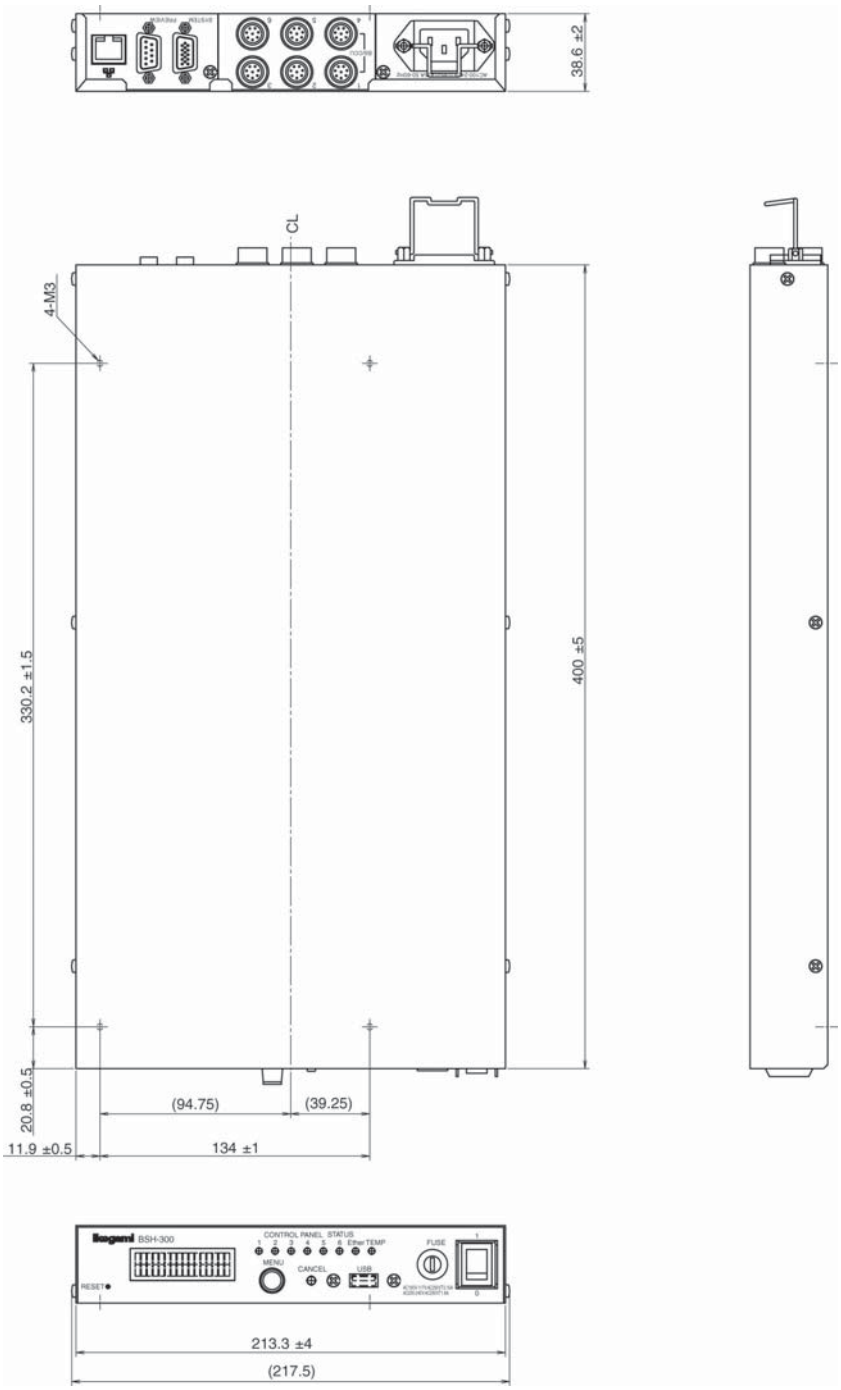
  This device is equipped with the preview control output that used be in OCP, which enables the preview function in the panelment.

1.3 External View

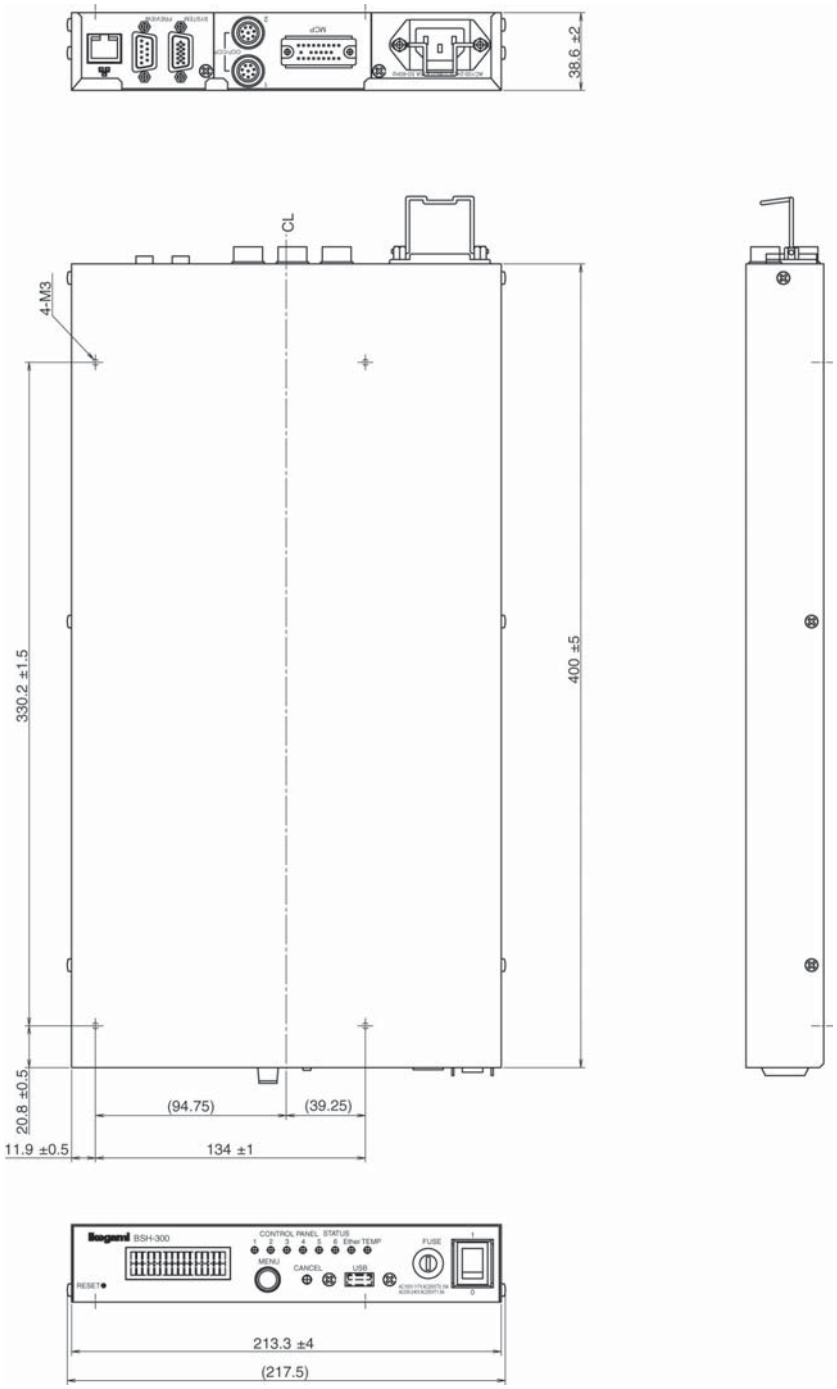
1) A-Type



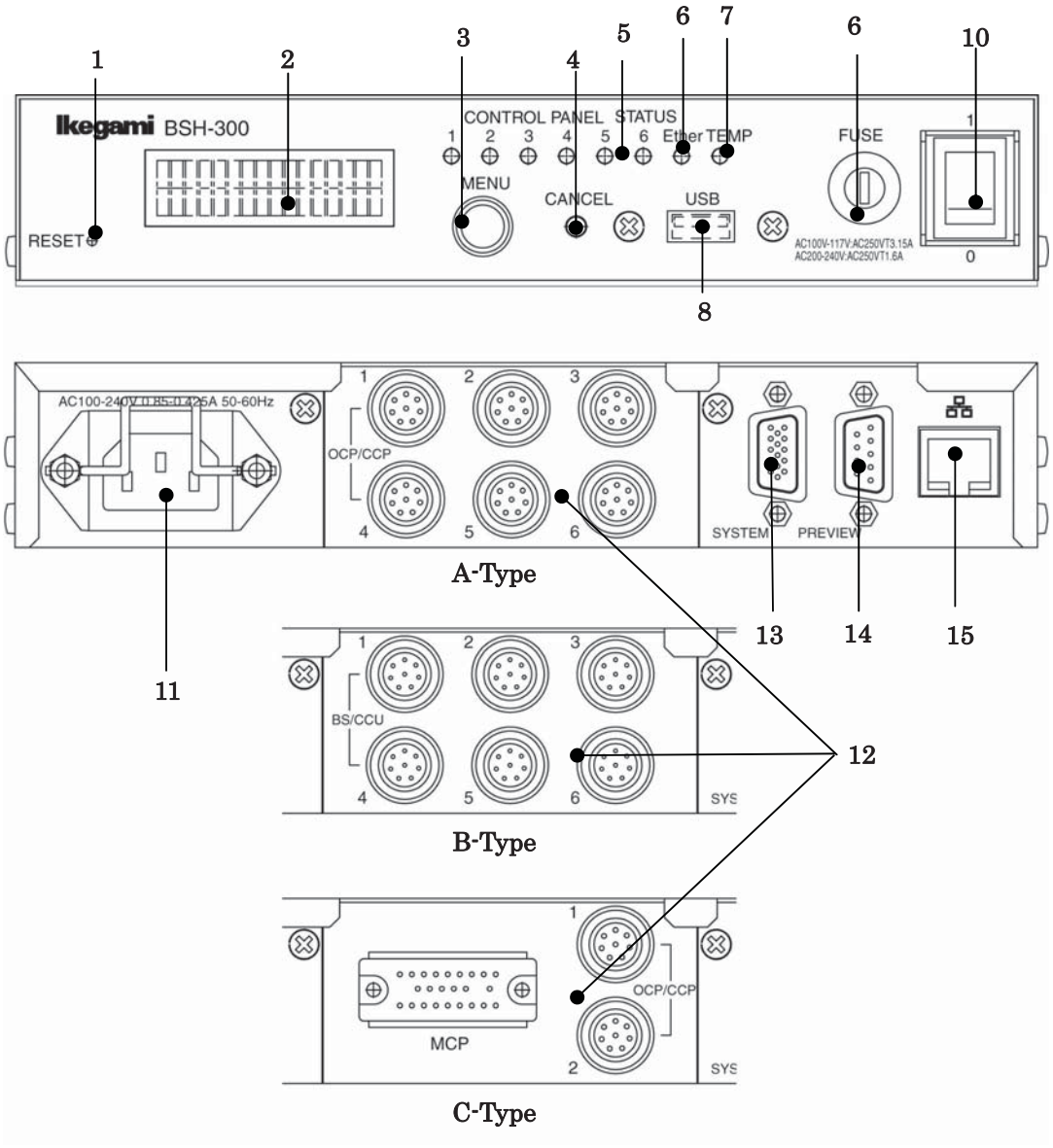
2) B-Type


38.6 ±2
CL
4-M3
330.2 ±1.5
400 ±5
20.8 ±0.5
11.9 ±0.5
(94.75)
(39.25)
134 ±1
BSH-300
CONTROL PANEL STATUS
FUSE
MENU
CANCEL
USB
RESET
213.3 ±4
(217.5)

3) C-Type


38.6 ±2
CL
4-M3
330.2 ±1.5
400 ±5
20.8 ±0.5
11.9 ±0.5
(94.75)
(39.25)
134 ±1
BSH-300
CONTROL PANEL STATUS
MENU
CANCEL
USB
FUSE
RESET
213.3 ±4
(217.5)

2 Part Names and Functions



1. RESET switch
2. LCD screen
3. MENU switch
4. CANCEL switch
5. RX status indicator
6. Ethernet status indicator
7. ALARM LED
8. USB connector
9. Fuse
10. Power switch
11. AC inlet
12. Connectors by type
13. SYSTEM connector
14. PREVIEW connector
15. LAN connector

1. RESET switch

This switch is a reset switch for BSH-300. This switch can reset BSH-300 when an abnormality occurs. Press the switch with a pointed object.

2. LCD screen

This screen displays information on this product, various error displays, and menu screen, etc.

3. MENU switch

Press and hold the MENU switch for approximately 3 seconds while the initial screen (BSH-300) is displayed on the LCD screen to display the menu screen. This switch also serves as a rotary encoder switch. Rotate it to switch pages and settings. It is also used as an "Enter" button by pressing the switch.

4. CANCEL switch

Press this switch to bring one hierarchy back for the page that is displayed on the LCD screen.

5. RX status indicator

TA communication indicator per line for the CP back connector. It lights up in yellow when the data is received from the device (control panel, BS/CCU, etc.) that is connected via CP connector. It lights up in green when the device connection is established on the Ethernet while communicating with the device that is connected via CP connector. Then, it lights up in red when an abnormality is detected in the communication with the device that is connected via CP connector.

The Type-A and Type-B has 6 lines for indicators and Type-C has 3 lines (indicators 4, 5, and 6 are not supported) according to the number of connectors by the BSH-300 type.

Note It may temporarily light up in red when you operate the items for which the process speed of the camera head and BS/CCU is slow on the control panel.

6. Ethernet status indicator

An indicator used to display the communication status of the LAN back connector. It lights up in green when the communication between the LAN connector and the devices such as BS/CCU and control panels is being executed or enabled.

7. ALARM LED

The red light turns on if an abnormality is detected in the temperature, power supply, or battery of this device. Check the information display "ALARM INFO" displayed on the LCD screen for details of the abnormality.

8. USB connector

This connector is used to connect USB device to update the firmware or perform other tasks.

9. Fuse (AC200-240V:AC250V T1.6A/AC100-117V:AC250V T3.15A)

Fuse is activated when abnormal current is detected in this device. Replace the fuse and then press it in after removing the cause.

10. Power switch

This switch is used to turn off the device. "I" is power ON, "O" is power OFF.

11. AC inlet

This is a power input connector for BSH-300. This can support AC100 - 240V without switching.

12. Connectors by type

Connectors vary depending on the device type.

A-Type: consists of six CP connectors (female plugs). Control panel that is not compatible with Ethernet is connected with CP cable.

B-Type: consists of six BS/CCU connectors (male plugs). BS/CCU that is not compatible with Ethernet is connected with CP cable.

C-Type: consists of two CP connectors (female plugs) and one MCP connector (female plug). Panel that is not compatible with Ethernet is connected with CP cables and MCP cable.

13. SYSTEM connector

This is a function extension connector.

Reference See "7.2 Pin function of external connector" for pin function.

14. PREVIEW connector

When the PREVIEW switch of OCP is pressed, the terminal of channel that supports the controlled BS/CCU will be short-circuited. Hence, the preview function is still available when the panel assignment is made.

Reference See "5 Video switching" for details. Also see "7.2 Pin function of external connector" for pin function.

15. LAN connector

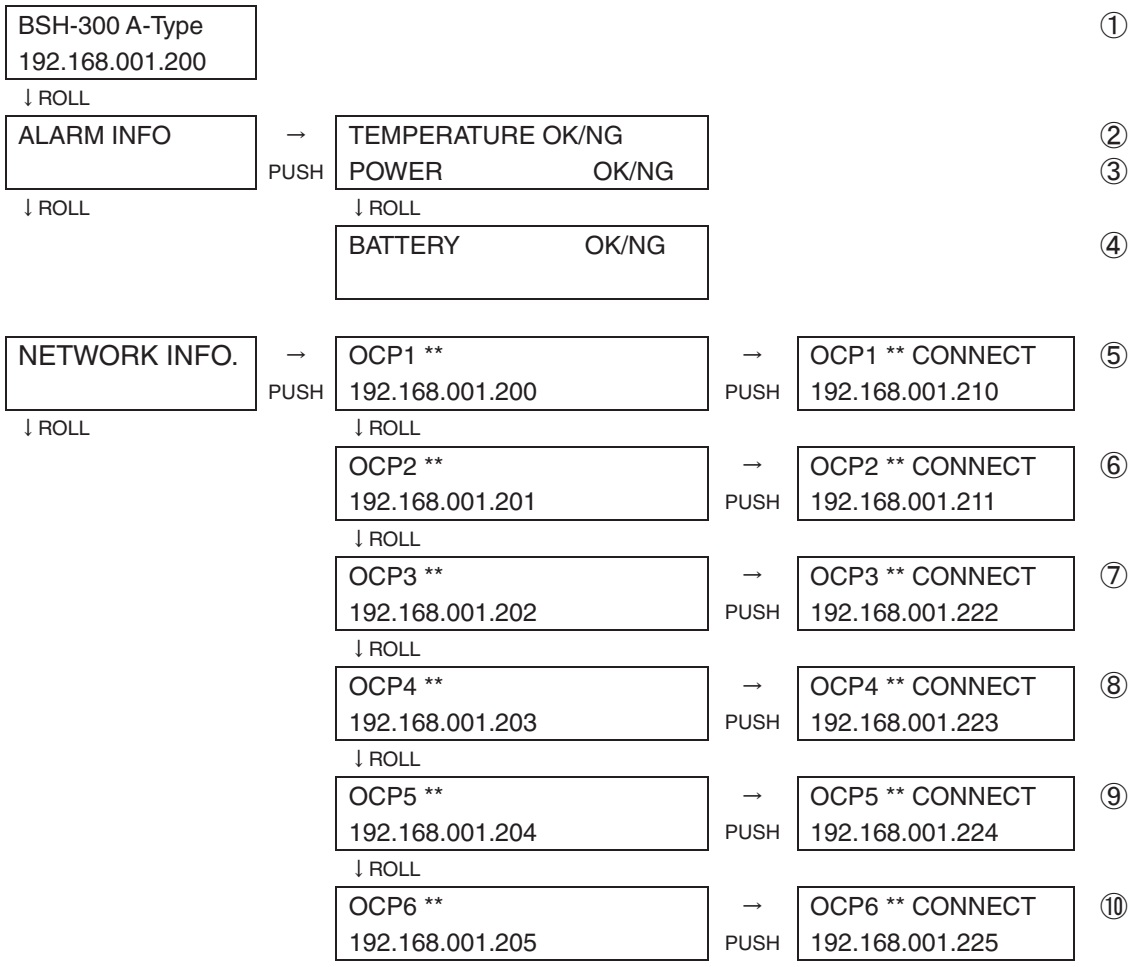
BS/CCU and control panel that are compatible with Ethernet are connected with LAN cable.

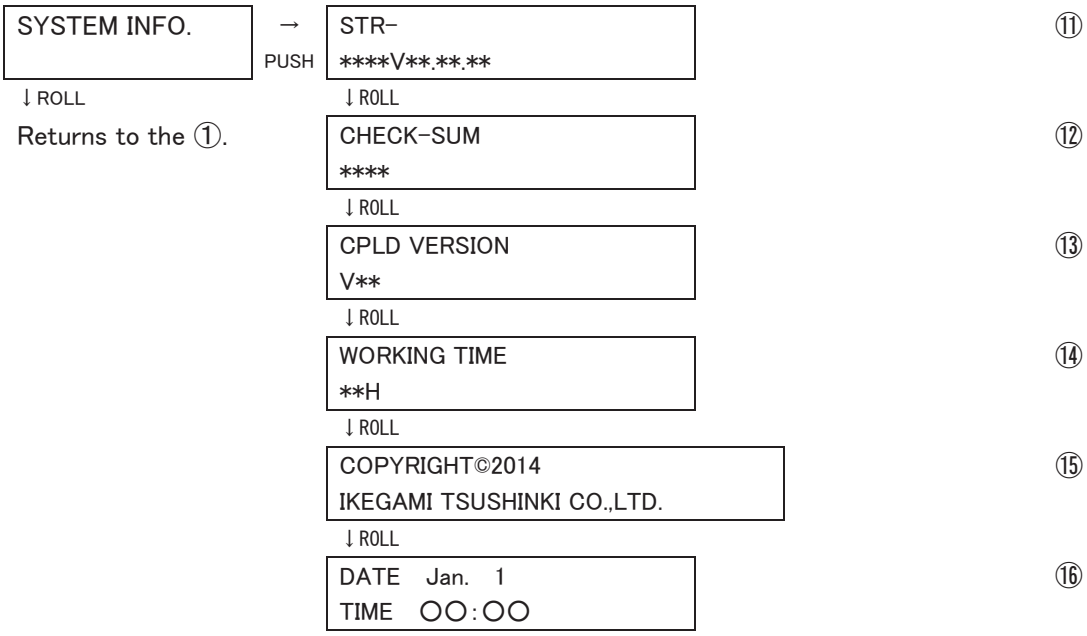
3 LCD screen

This chapter describes the items displayed on the LCD screen.

3.1 Device information

Turn the rotary encoder of MENU switch on the initial screen to move to the item that displays the information of this device. Once moved to the item, press the MENU switch to display the information. Turn the rotary encoder to switch between pages. Press the CANCEL switch to bring one hierarchy back for the screen. Press the CANCEL switch to bring one hierarchy back for the screen. If the CANCEL switch is kept being pressed, the screen stops at the initial screen. The structure and overview of the display screen for the device information in A-Type are shown below.





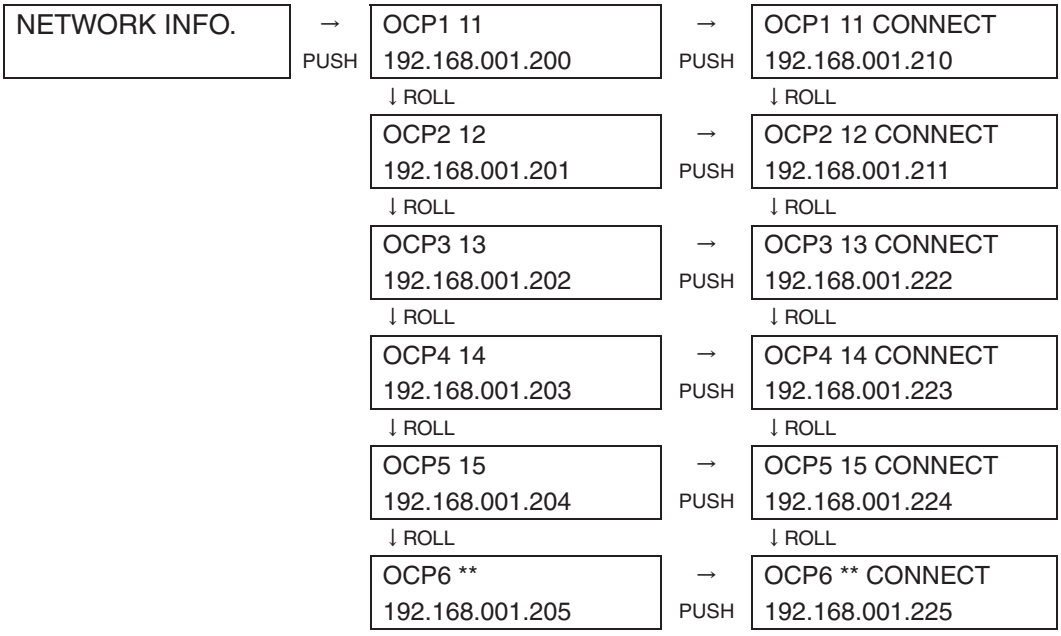
* The display and structure of NETWORK INFO vary depending on the type.

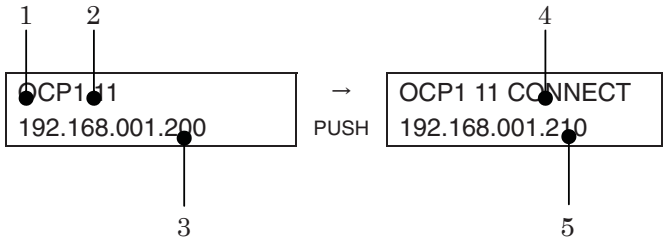
No.	Description
①	Initial screen. Displays the device name on the upper left corner, the type name on the upper right, and the IP address of this device at the bottom.
②	Displays NG when abnormal temperature is detected.
③	Displays NG when power-down is detected.
④	Displays NG when low battery voltage is detected.
⑤	Displays the connection information for CCP1 of the back connector.
⑥	Displays the connection information for CCP2 of the back connector.
⑦	Displays the connection information for CCP3 of the back connector.
⑧	Displays the connection information for CCP4 of the back connector.
⑨	Displays the connection information for CCP5 of the back connector.
⑩	Displays the connection information for CCP6 of the back connector.
⑪	Displays the administration number for the software of this device.
⑫	Displays the administration number for the software of this device.
⑬	Displays the administration number for the CPLD of this device.
⑭	Displays the accumulated operating time to the present date.
⑮	Displays copyright.
⑯	Displays the present time.

3.2 NETWORK INFO.

The items of "NETWORK INFO." in "3.1 Device information" vary depending on the type. The structure and notation of "NETWORK INFO." by type are described below.

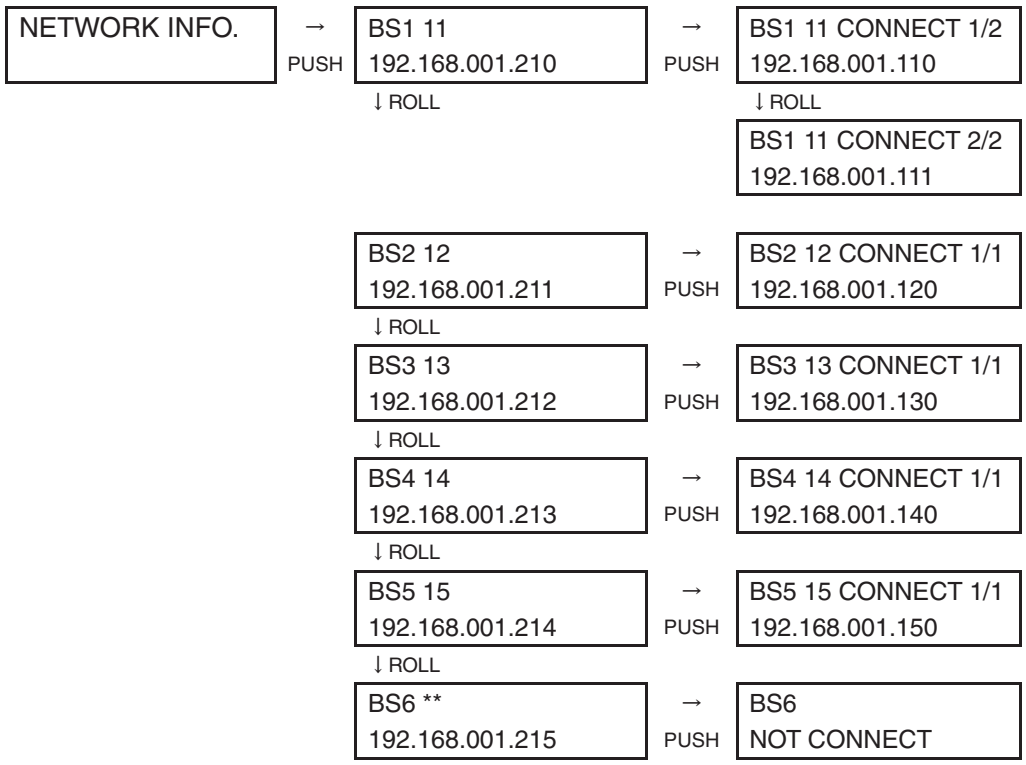
1) A-Type

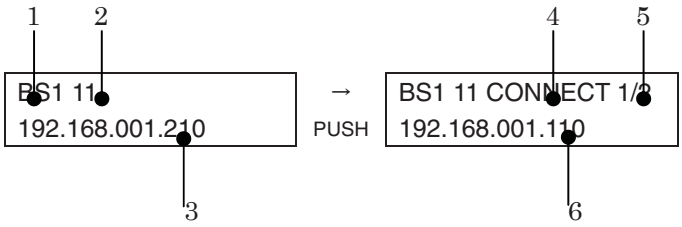




1. Channel of the control panel that is connected to the back connector.
2. Program number for the supported camera head. "**" is displayed when it is not connected.
3. IP address for the BSH-300.
4. Press the MENU switch to switch to the information display on the connected BS/CCU side. Then, "CONNECT" is displayed on the upper right corner of the screen.
5. IP address of the connected CS/CCU.

2) B-Type

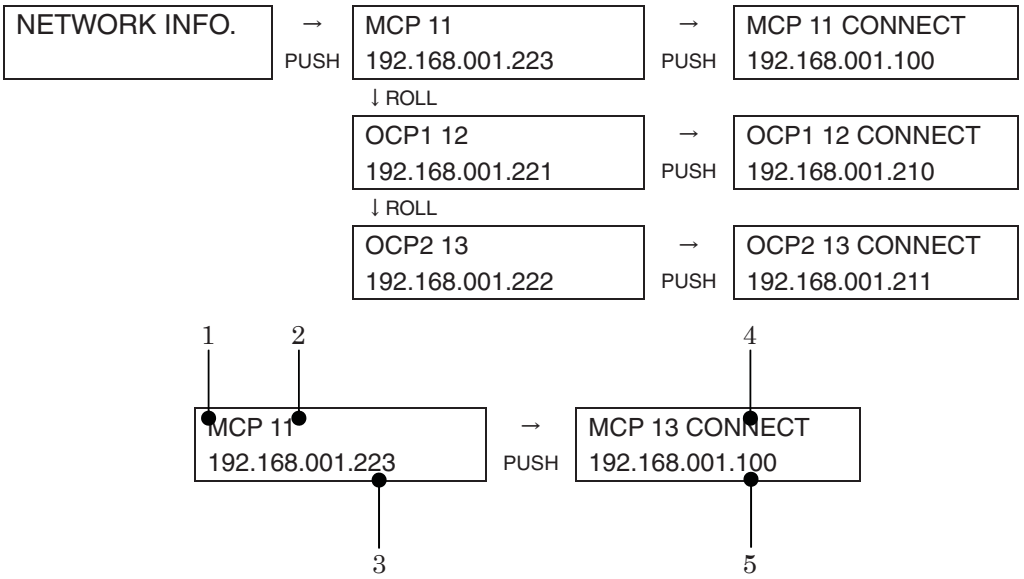




1. BS/CCU channel that is connected to the back connector.
2. Program number for the supported camera head. "**" is displayed when it is not connected.
3. IP address for the BSH-300.
4. Press the MENU switch to switch to the information display on the connected control panel. Then, "CONNECT" is displayed on the upper right corner of the screen. The following will be displayed if the control panel is not connected.

5. Number for the control panel that supports BS/CCU. The denominator is the number of control panels, and the numerator is the number for the control panel.
6. IP address of five control panels. Turn the MENU switch to switch between the displays of the number and IP address of the control panel.

3) **C-Type**



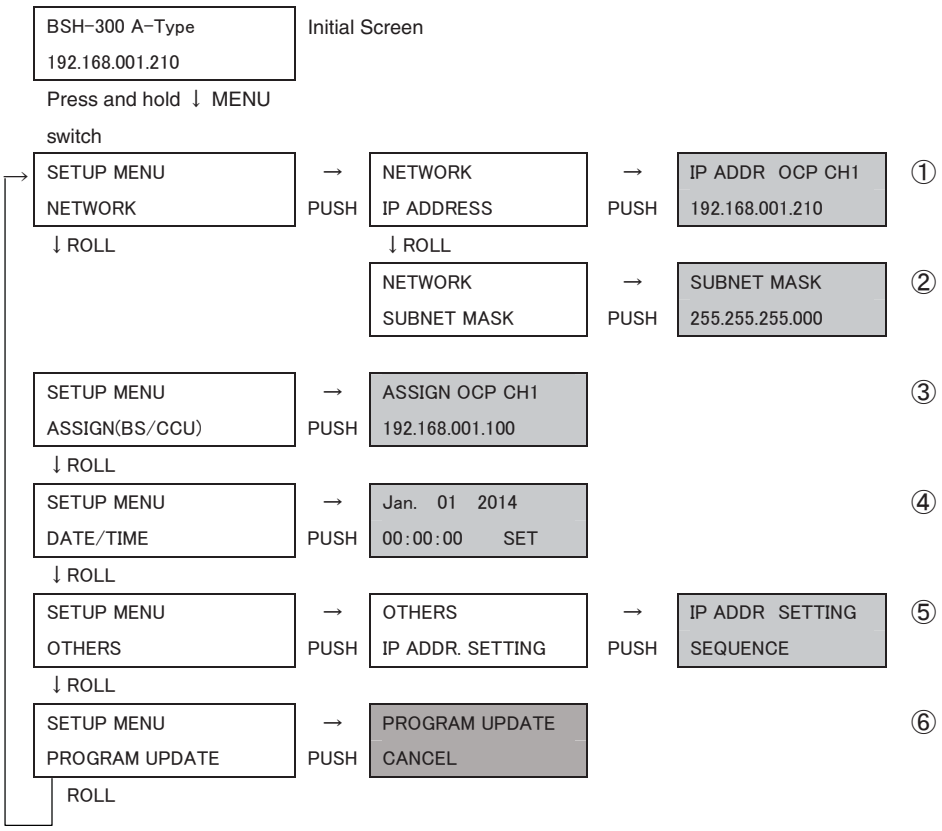
1. Channel of the control panel that is connected to the back connector. C-type has 1ch for MCP and 2ch for OCP.
2. Program number for the supported camera head. "**" is displayed when it is not connected.
3. IP address for the BSH-300.
4. Press the MENU switch to switch to the information display on the connected BS/CCU side. Then, "CONNECT" is displayed on the upper right corner of the screen.
5. IP address of the connected BS/CCU.

3.3 Menu screen

Press and hold the MENU switch for approximately 3 seconds while the initial screen or information display screen is displayed to proceed to the menu screen where you can change the settings. Press the MENU switch to proceed to the settings screen. Turn the rotary encoder to switch between pages. Press the CANCEL switch to bring one hierarchy back for the screen. The structure of the menu screen varies depending on the device type.

3.3.1 A-Type menu

The structure of menu and details of settings for A-Type are shown below:



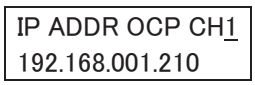
* The screen with colors is the setting screen.

① IP ADDRESS

Sets the IP address of this device. The IP address that is set here will be the IP address corresponding to the CP back connector 1. This IP address will be displayed on the initial screen. The setting procedure for the address is described below.

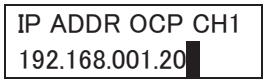
I. Open the menu screen. Press the MENU switch in the NETWORK, and then press MENU switch in IP ADDRESS to open the settings screen for IP address.
The default address is set at the factory.

II. When the setting screen for IP address is open, the value of the address to be changed is displayed with underline.



Turn the MENU switch to move the underline and select the value you want to change.

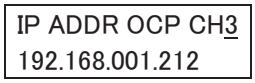
III. Once the value is selected, press the MENU switch. The part used to be underlined will be inverted and flashes.



Turn the MENU switch in this state to change the selected value. Turn the switch right to increase the value, and turn the switch left to decrease it. Sets the address to the value between 0 and 255. If you press the CANCEL switch while changing the value, it will revert to the value it was before you changed it.

IV. Once the value is selected, press the MENU switch. The IP address will be confirmed.

V. By switching the values of CH○ between CH1 and CH6 on the right upper corner of the LCD screen, you can switch the displays of the IP addresses of CP back cables from 1 to 6 and change their values.



Note You can change the values for CH2 to CH6 only when the "IP ADDR.SETTING" in ⑤ is set to "RANDOM". When it is set to "SEQUENCE", you can switch the displays but cannot change the values.

* The subsequent procedure for the address setting is omitted as it is the same as the above.

② SUBNET MASK

Sets the subnet mask of this device.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

③ ASSIGN(BS/CCU)

Sets the IP addresses of the BS/CCU to which the control panels are connected. These panels are connected to the CP back connectors 1 to 6 of this device.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

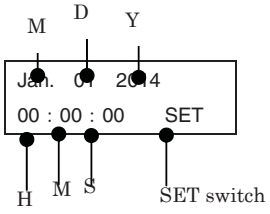
Note You can change the values for CH2 to CH6 only when the "IP ADDR.SETTING" in ⑤ is set to "RANDOM". When it is set to "SEQUENCE", you can switch the displays but cannot change the values.

④ DATE/TIME

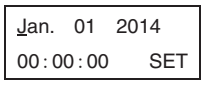
Sets the date and time. The setting procedure is described below.

I. Open the menu screen. Press the MENU switch in the DATE/TIME to open the settings screen for date and time.

II. The DATE/TIME screen is shown below.

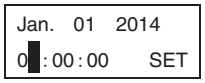


III. When the DATE/TIME screen is open, the item to be changed is displayed with underline.



Turn the MENU switch to move the underline and select the item you want to change.

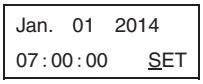
IV. Once the item is selected, press the MENU switch. The part used to be underlined will be inverted and flashes.



Turn the MENU switch in this state to change the selected value. Turn the switch right to increase the value, and turn the switch left to decrease the value. If you press the CANCEL switch while selecting the value, it will revert to the value it was before you changed it and returns to the state as shown in III.

V. Once it is selected, press the MENU switch. It returns to the state as shown in II.

VI. Once all items are set, turn the MENU switch to move the underline to the "SET" item.



VII. If the MENU switch is pressed in this state, the date and time are confirmed, and the MENU screen is moved back one hierarchy.
If you do not perform the "SET" operation and just exit the screen using the CANCEL switch, etc., all settings in the DATE/TIME screen reverts to the screen it was before you changed it.

* The subsequent procedure for the DATE/TIME setting is omitted as it is the same as the above.

⑤ IP ADDR.SETTING

Selects whether to make the setting of IP address "SEQUENCE" or "RANDAM".

SEQUENCE: The IP addresses are set in sequence, starting from CH1. You cannot change the IP addresses of CH2 to CH6 in this setting.

RANDOM: The IP addresses can be set for each channel. You can change the IP addresses of CH1 to CH6 in this setting.

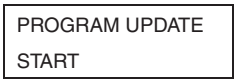
⑥ PROGRAM UPDATE

Updates the firmware of this device. The update procedure is described below.

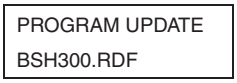
I. Connect the USB memory that contains RDF file for update to the USB connector of this device.

II. Open the menu screen. Press the MENU switch in the PROGRAM UPDATE section to open the PROGRAM UPDATE execution screen.

III. When the MENU switch is turned in the PROGRAM UPDATE screen, the letters "START" is displayed.



IV. Press the MENU switch while the letters "START" are displayed to display the RDF file name that is stored in a USB memory. (The RDF file name extension is ".RDF" or ".rdf".)

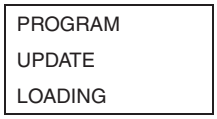


If the USB memory is not connected or the RDF file does not exit, [NO RDF FILE] is displayed.

Only half-size alphanumeric characters can be correctly displayed in this device. Characters other than half-size alphanumeric characters will not be correctly displayed.

V. Turn the MENU switch to switch files.

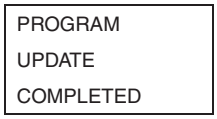
VI. When the update file is selected and the MENU switch is turned, [LOADING] is displayed and then [WRITING: ○○%] is displayed after a short time.



When the file other than the update file for BSH-300 is selected, [FILE ERROR] is displayed and the update is failed. Select a correct file again.

If the power supply is shut off while performing updates, it starts up with the firmware it was before the update.

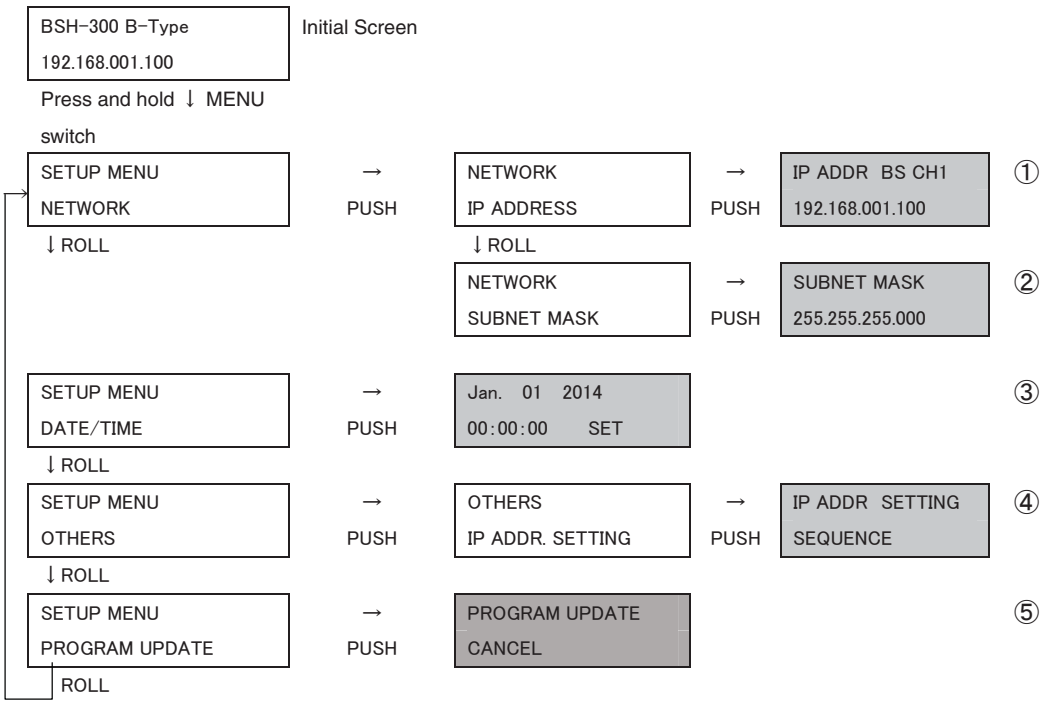
VII. The status becomes [WRITING: 100%] when the update completes, and then [COMPLETED] will be displayed.



VIII. Shut off the power manually and restart the device.

3.3.2 B-Type menu

The structure of menu and details of settings for B-Type are shown below:



* The screen with colors is the setting screen.

① IP ADDRESS
Sets the IP address of this device. The IP address that is set here will be the IP address corresponding to the CP back connector 1. The address for CH1 that is set here will be displayed as an IP address on the initial screen.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

Note You can change the values for CH2 to CH6 only when the "IP ADDR.SETTING" in ⑤ is set to "RANDOM". When it is set to "SEQUENCE", you can switch the displays but cannot change the values.

② SUBNET MASK
Sets the subnet mask of this device.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

③ DATE/TIME
Sets the date and time.

Reference See "3.3.1 A-Type menu ④ DATE/TIME" for the procedure of setting the address.

④ IP ADDR.SETTING
Selects whether to make the setting of IP address "SEQUENCE" or "RANDAM".
SEQUENCE: The IP addresses are set in sequence, starting from CH1. You cannot change the IP addresses of CH2 to CH6 in this setting.

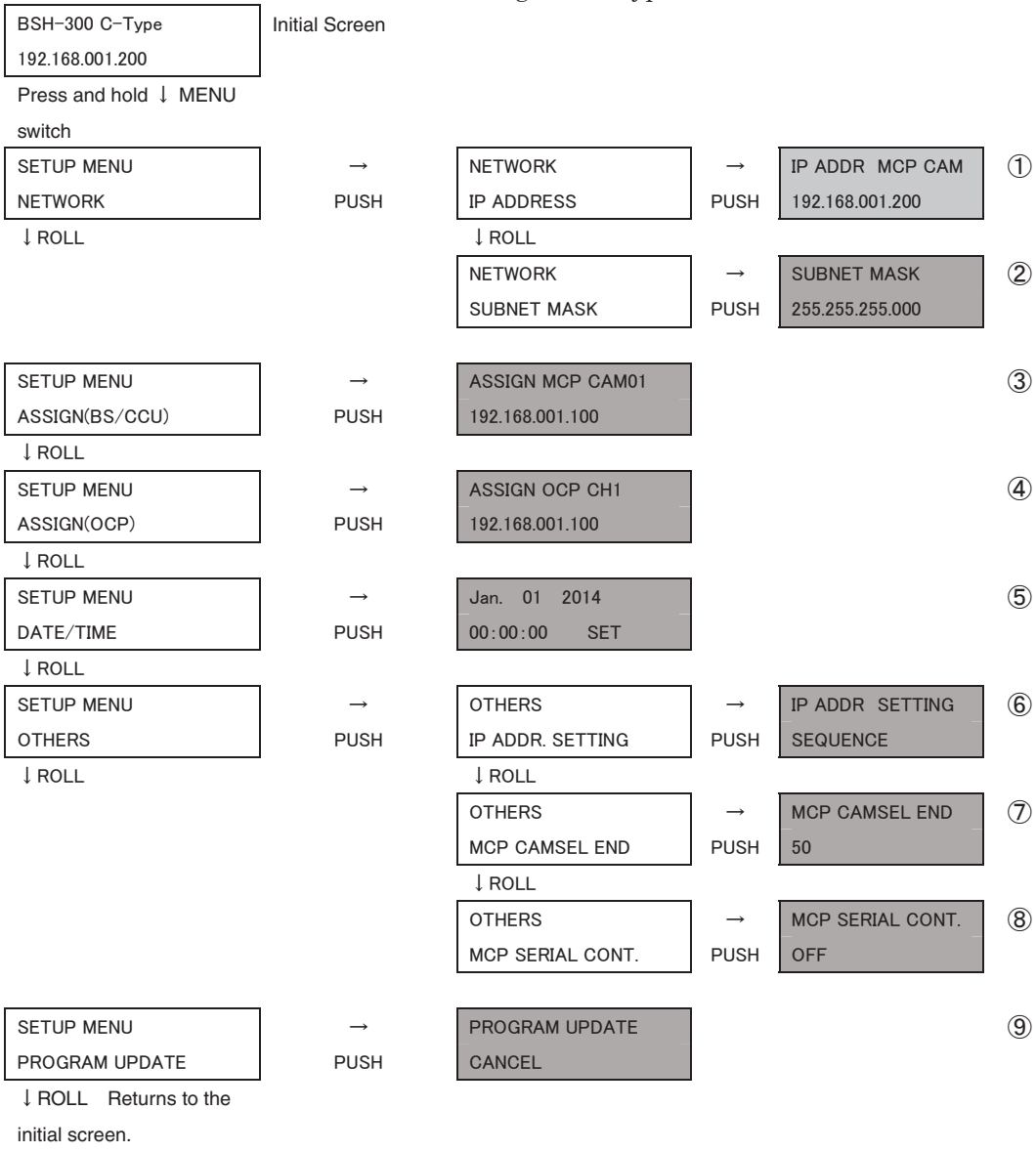
RANDOM: The IP addresses can be set for each channel. You can change the IP addresses of CH1 to CH6 in this setting.

⑤ PROGRAM UPDATE
Updates the firmware of this device.

Reference See "3.3.1 A-Type menu ⑥ PROGRAM UPDATE" for the procedure of updates the firmware.

3.3.3 C-Type menu

The structure of menu and details of settings for C-Type are shown below:

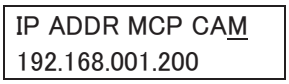


* The screen with colors is the setting screen.

① IP ADDRESS

Sets the IP address of this device. The IP address that is set here will be the IP address corresponding to the MCP back connector and CP back connectors 1 and 2. The address for MCP that is set here will be displayed as an IP address on the initial screen.

For switching the channels in the IP ADDRESS setting for C-Type, you can switch the items on the right corner of LCD screen in the sequence of "MCP CAM" → "OCP CH1" → "OCP CH2".



Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

Note You can change the values for OCP CH1 and OCP CH2 only when the "IP ADDR.SETTING" in ⑥ is set to "RANDOM". When it is set to "SEQUENCE", you can switch the displays but cannot change the values.

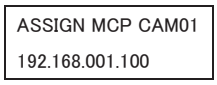
② SUBNET MASK

Sets the subnet mask of this device.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

③ ASSIGN(MCP)

Sets the IP addresses for each camera select of the MCP panel that is connected to the MCP back connector of this device.

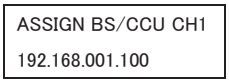


You can switch the MCP camera select No. with CAM○ on the right upper corner of the LCD screen.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

Note You can change the IP addresses for CAM02 to CAM50 only when the "IP ADDR.SETTING" in ⑥ is set to "RANDOM". When it is set to "SEQUENCE", you can switch the displays (except for CAM01) but cannot change the IP addresses.

④ ASSIGN(BS/CCU)
Sets the IP addresses of the BS/CCU to which the OCP panels are connected. These OCP panels are connected to the OCP back connectors 1 and 2 of this device.



You can switch the camera select No. with CH○ on the right upper corner of the LCD screen.

Reference See "3.3.1 A-Type menu ① IP ADDRESS" for the procedure of setting the address.

Note You can change the IP addresses for CH1 only when the "IP ADDR.SETTING" in ⑥ is set to "RANDOM". When it is set to "SEQUENCE", you can switch the displays (except for CAM01) but cannot change the IP addresses.

⑤ DATE/TIME
Sets the date and time.

Reference See "3.3.1 A-Type menu ④ DATE/TIME" for the procedure of setting the date and time.

⑥ IP ADDR.SETTING
Selects whether to make the setting of IP address "SEQUENCE" or "RANDAM".
SEQUENCE: Makes the setting of IP addresses in sequence, starting from MCP. You cannot change the IP addresses of CH2 and CH2 in this setting. Also makes the setting for ③ ASSIGN (MCP) in sequence, starting from MCP CAM01, and for ④ ASSIGN (OCP) in sequence, starting from OCP CH1.
RANDOM: IP address can be set in each channel.

⑦ MCP CAMSEL END
Please set the last channel of the MCP camera select.

⑧ MCP SERIAL CONT
Please set the serial control status of the MCP camera select.

Reference See the "MCP-200 operation manual". This item should be set as the same as the panel configuration "CSU Serial Control" of MCP-200.

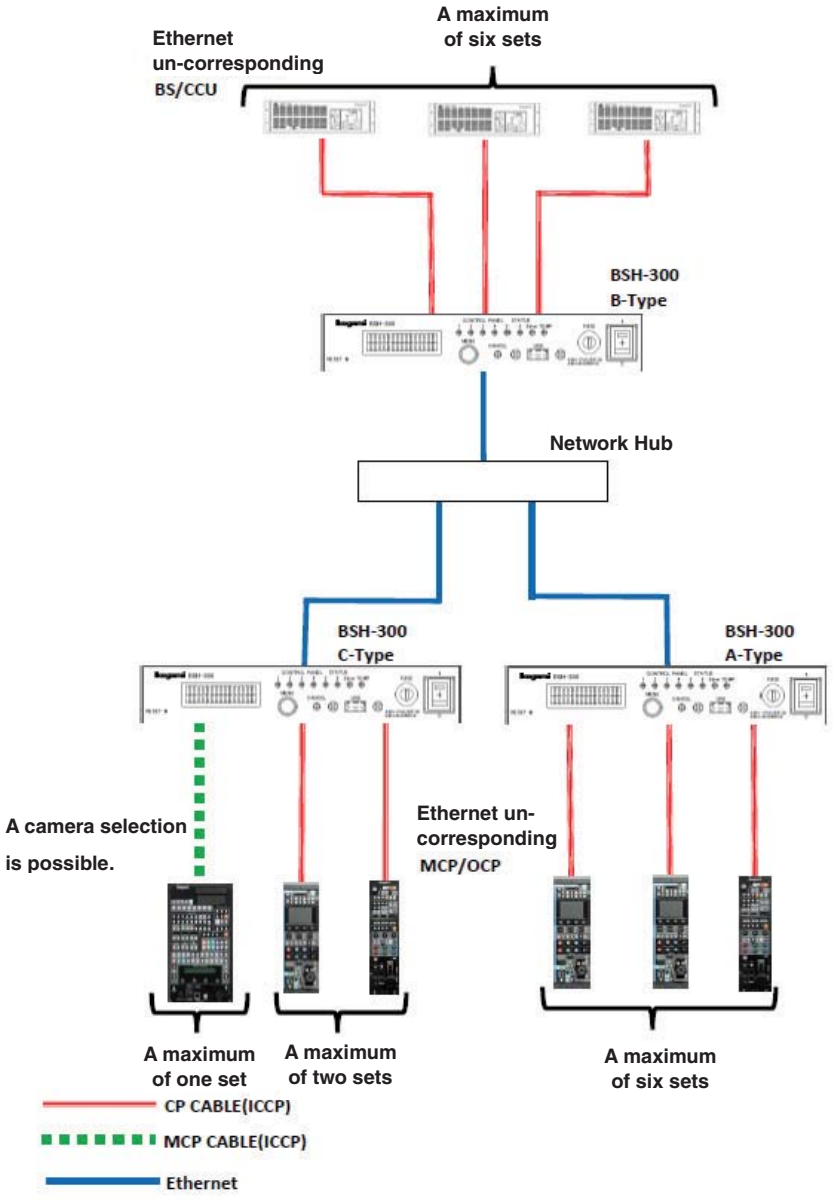
⑨ PROGRAM UPDATE

Reference See "3.3.1 A-Type menu ⑥ PROGRAM UPDATE" for the procedure of updating the reference firmware.

4 Network

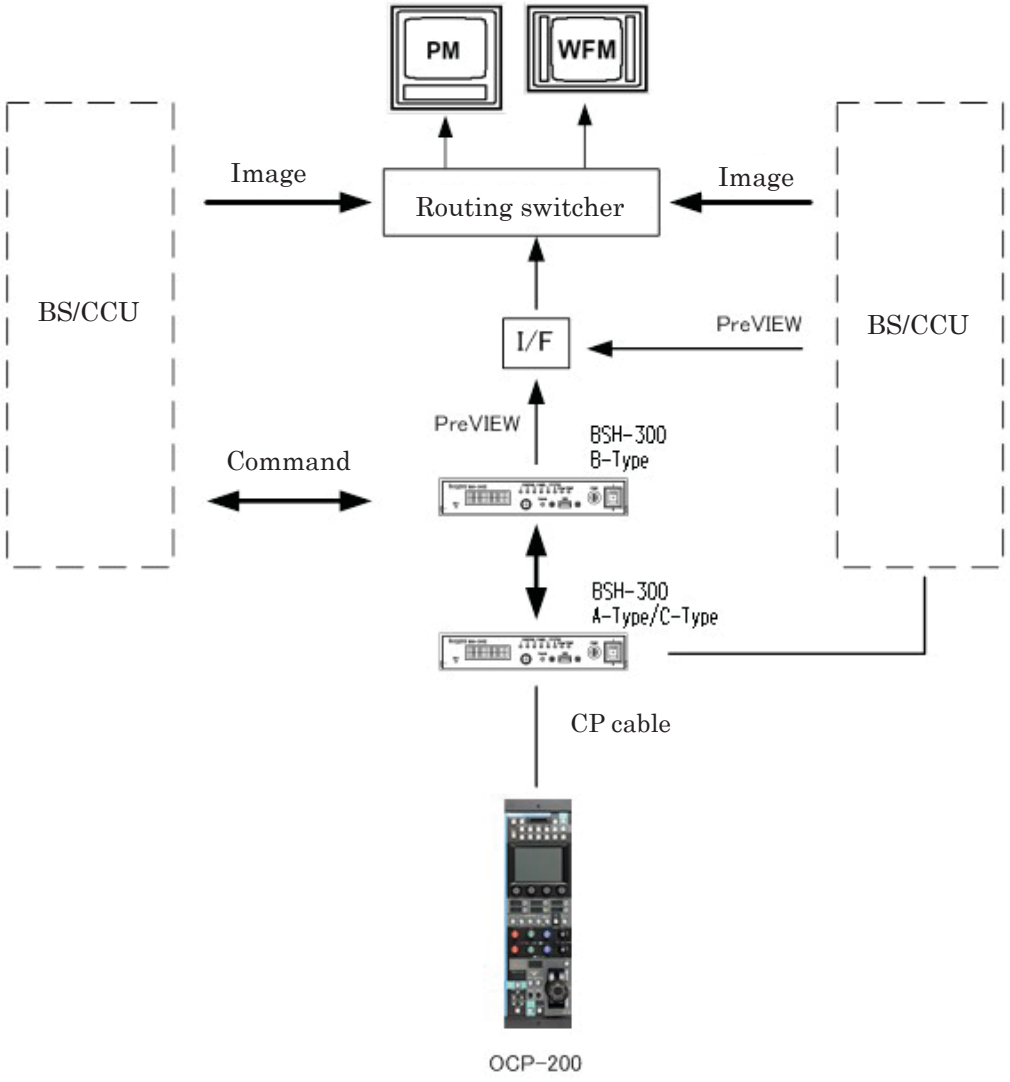
This chapter describes the items for the network operation, including the setting and connection procedures for both this device and peripherals.

4.1 Conceptual diagram of the network

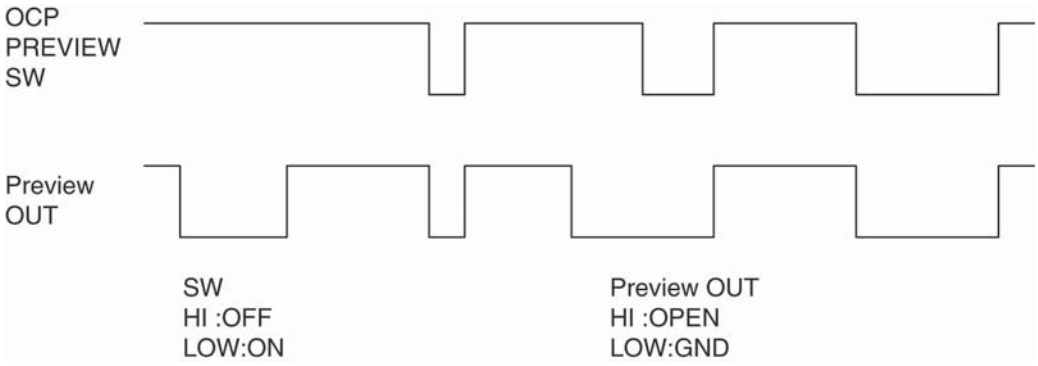


5 Video switching

When the PREVIEW switch of OCP is pressed, the preview signal is output from the BS/CCU that is compatible with the command-connected camera network, or BSH-300. Controlling the general routing switcher with this signal enables to acquire the video signal that is linked to the Preview switch.



The Preview signal is controlled in parallel by PREVIEW switch operation in OCP and the camera select operation in MCP.
In the operation from OCP, it turns ON while PREVIEW switch is pressed and turns OFF when the switch is released.



By setting the panel configuration, you can restrict the sending of the Preview control command in both MCP and OCP. Hence, you can decide whether the Preview signal of the BS/CCU and BS hub should be operated from MCP or operated from OCP, or operated from both MCP and OCP.

See the operation manual for MCP/OCP to check if the Preview control command is sent or not.

6 Troubleshooting

In the case of network operation, the connected devices could fail simultaneously. This is caused by the network failure, in which the command control cannot be performed correctly. There are several causes for the network failure.

- Mistakes in the IP address setting
  If the IP addresses are duplicated, it may cause failure. Check if the IP addresses for devices are duplicated.

- Device failure
  Failure in a particular device may cause malfunction. In order to find the failed device, it is necessary to temporarily disconnect devices from the network. OCP-200/MCP-200 can be disconnected by opening the update screen.

  Reference See the operation manual of OCP-200/MCP-200 for details.

  Note Even if the network is disconnected, the hardware will not be completely disconnected. Hence, in the case of device failure of the network driver, this operation may not be able to disconnect it. In this case, the connected COMMANDO connector needs to be removed.

7 Specifications

7.1 Rating

1） A-Type

Item		Rating	Remarks
Power supply	Power supply voltage	AC100V - 240V 50/60Hz	
	Power consumption	150VA	
Ambient conditions	Operating temperature	0°C - 45°C	
	Storage temperature	-25°C - +60°C	
	Operating humidity range	30% - 90%	(no condensation)
External dimensions (Width/height/depth)		W217.5 x H38.6 x D400	
Weight		2.6kg	
MCP/OCP remote		6 channels	ICCP
	Max. extension distance	50m	OCP-200 CP cable MCP-200 When using an external power supply
		30m	MCP-200 CP cable
	Min. extension distance	1m	CP cable

2) B-Type

Item		Rating	Remarks
Power supply	Power supply voltage	AC100V - 240V 50/60Hz	
	Power consumption	150VA	
Ambient conditions	Operating temperature	0°C - 45°C	
	Storage temperature	-25°C - +60°C	
	Operating humidity range	30% - 90%	(no condensation)
External dimensions (Width/height/depth)		W217.5 x H38.6 x D400	
Weight		2.6kg	
BS/CCU remote		6 channels	ICCP
	Max. extension distance	300m	CP cable

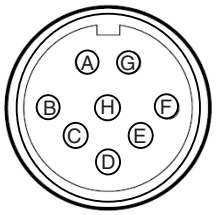
3） C-Type

Item		Rating	Remarks
Power supply	Power supply voltage	AC100V - 240V 50/60Hz	
	Power consumption	150VA	
Ambient conditions	Operating temperature	0°C - 45°C	
	Storage temperature	-25°C - +60°C	
	Operating humidity range	30% - 90%	(no condensation)
External dimensions (Width/height/depth)		W217.5 x H38.6 x D400	
Weight		2.6kg	
MCP/OCP remote		OCP x 2 channels MCP x 1 channel	ICCP
	Max. extension distance	50m	OCP-200 CP cable MCP-200 When using an external power supply
		10m	MCP-200 MCP cable
	Min. extension distance	10m	CP cable

7.2 Pin function of an external connector

1. CP connector (A-Type/C-Type)

── Layout ──



Insert side

This connector is used to input/output various signals between CCP/MCP and BSH-300.

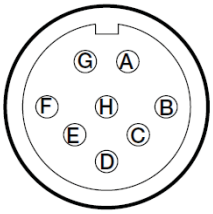
Main body side: PRC05-R8F

Cable side: PRC05-199P9-8M (8-pin male plug) or equivalent

Pin No.	Name	Function	Direction	External interface
A	A	Network command data input/output (A) between BSH-300 and OCP/MCP	IN/OUT	
B	B	Network command data input/output (B) between BSH-300 and OCP/MCP	IN/OUT	
C	NC	----------		
D	NC	----------		
E	+12V OUT	DC+12V power supply output	OUT	
F	+12V RET	DC+12V power supply output ground	IN	
G	NC	----------		
H	NC	----------		

2. BS/CCU connector (B-Type)

—Layout—



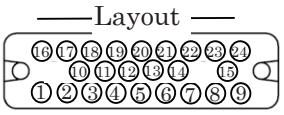
Insert side

This connector is used to input/output various signals between BS/CCU and BSH-300.

Main body side: PRC05-R8M
Cable side: PRC05-199P9-8F (8-pin male plug) or equivalent

Pin No.	Name	Function	Direction	External interface
A	HED(+)	Serial command from BS/CCU to BSH-300 Data input (+)	IN	
B	HED (-)	Serial command from BS/CCU to BSH-300 Data input (-)	IN	
C	HEC(+)	Serial command from BSH-300 to BS/CCU Data output (+)	OUT	
D	HEC (-)	Serial command from BSH-300 to BS/CCU Data output (-)	OUT	
E	+12V IN	DC+12V power supply input (used to check if there is connection or not)	IN	
F	+12V RET	DC+12V power supply input ground	OUT	
G	NC	----------		
H	NC	----------		

3. MCP connector



Insert side

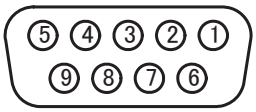
This connector is used to input/output various signals between MCP and BSH-300.

Main body side: SW-162A(09)
Cable side: P-1624BA

Pin No.	Name	Function	Direction	External interface
1	CSU SL AV	Select signal (VIDEO) of CSU No.	IN	
2	CSU SL BV	Select signal (VIDEO) of CSU No.	IN	
3	CSU SL CV	Select signal (VIDEO) of CSU No.	IN	
4	CAM SL AV	Select signal (VIDEO) of camera No.	IN	
5	CAM SL BV	Select signal (VIDEO) of camera No.	IN	
6	CAM SL CV	Select signal (VIDEO) of camera No.	IN	
7	CSU SL AC	Select signal (COMMAND) of CSU No.	IN	
8	CSU SL BC	Select signal (COMMAND) of CSU No.	IN	
9	CSU SL CC	Select signal (COMMAND) of CSU No.	IN	
10	CAM SL AC	Select signal (COMMAND) of camera No.	IN	
11	CAM SL BC	Select signal (COMMAND) of camera No.	IN	
12	CAM SL CC	Select signal (COMMAND) of camera No.	IN	
13	HED TX(+)	Send data (+) from BSH-300 to MCP	OUT	
14	HED TX(-)	Send data (-) from BSH-300 to MCP	OUT	
15	HEC RX(+)	Send data (+) from MCP to BSH-300	IN	
16	HEC RX(-)	Send data (-) from MCP to BSH-300	IN	
17	+12V OUT	DC+12V power supply output		
18	+12V OUT	DC+12V power supply output		
19	+12V RET	DC+12V power supply output ground		
20	+12V RET	DC+12V power supply output ground		
21	YC PARDE	YC PARADE control signal	IN	
22	STAIR ON	STAAIR ON control signal	IN	
23	NC			
24	NC			

4. PREVIEW connector

Layout



Insert side

This is an video select connector that is linked to OCP/MCP.

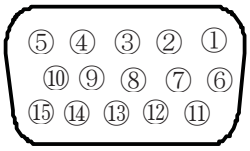
Main body side: D-sub 9-pin (socket)

Cable side: D-sub 9-pin (pin), inch screw

Pin No.	Name	Function	Direction	External interface
1	CH1 ON	Preview CH1	OUT	
2	CH2 ON	Preview CH2	OUT	
3	CH3 ON	Preview CH3	OUT	
4	CH4 CH	Preview CH4	OUT	
5	CH5 CH	Preview CH5	OUT	
6	CH6 CH	Preview CH6	OUT	
7	NC	----------		
8	GND	Signal ground	IN	
9	GND	Signal ground		

5. SYSTEM connector

———Layout———



Insert side

This is an extension connector.

Main body side: D-sub 15-pin (socket)
Cable side: D-sub 15-pin (pin), inch screw

Pin No.	Name	Function	Direction	External interface
1	EXT OUT1	Camera status output 1	OUT	
2	EXT OUT1	Camera status output 2	OUT	
3	EXT OUT3	Camera status output 3	OUT	
4	EXT OUT4	Camera status output 4	OUT	
5	EXT OUT5	Camera status output 5	OUT	
6	GND	Signal ground		
7	TX+	Command (+) output	OUT	RS-422
8	TX-	Command (-) output	OUT	RS-422
9	RX+	Command (+) input	IN	RS-422
10	RX-	Command (-) input	IN	RS-422
11	CAMSEL ENABLE	Camera select enable input	IN	
12	CAM SEL1	Camera select 1	IN	
13	CAM SEL2	Camera select 2	IN	
14	CAM SEL2	Camera select 3	IN	
15	CAM SEL2	Camera select 4	IN	

BSH-300

Ethernet/ICCP Converter

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