

Panasonic

System Controller Operating Instructions

Model No. **WV-CU161**



ENGLISH

FRANÇAIS

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

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PREFACE

The WV-CU161 System Controller is designed for one-to-one use with the Combination Camera such as the WV-CS854/WV-CS654/WV-CS604 Combination Camera or the WV-RC100/WV-RC150 Receiver.

Camera control is performed by multiplexing the control signal with the video signal by connecting an AV Codec or the like, or via RS-485 site communication*1.

Alarm signals, such as motion detector signals, can be supplied to external equipment from a built-in alarm output connector.

An alarm input connector allows moving the camera to the preset position when an alarm is activated.

The WV-CU161 is capable of downloading preset data from a camera such as the WV-CS854, save it in memory, and upload it to the other combination cameras.

It can also control the camera patrol learning operations, including camera lenses, electronic zoom, auto focus, and pan/tilt heads.

Consult your dealer about camera models suitable for uploading and downloading data. Please also refer to the Operating Instructions of other peripherals.

FEATURES

The WV-CU161 offers the following functions:

Remote control*3 of the camera*2 and the WV-CU161 System Controller, including:

- 1 Pan/Tilt: Slow Pan/Slow Tilt/Auto Pan/Auto Sequence/Auto Sort/Random
- 2 Lens functions: Iris/Focus/Auto Focus/Zoom
- 3 Preset (Selection/Program)/Home/Camera Patrol (Learn/Play/Stop)
- 4 Color/Black and White selection
- 5 Housing: Defroster/Wiper/Auxiliary 1, 2
- 6 External Devices (Power On/Off)
- 7 Alarm (Suspend/Reset)
- 8 Camera setup

Note: The WV-CU161 is not provided with functions to control the audio signal. Audio communication is not possible, regardless of whether audio boards are installed in the receiver.

*1 Communicate via RS-485 site communication is disabled in a daisy-chain connection.

*2 Controlling the same combination camera from multiple WV-CU161 units installed in different locations is not possible.

*3 For remote control functions refer to the Operating Instructions of the combination camera.

PRECAUTIONS

- **Refer all work related to the installation of this product to qualified service personnel or system installers.**

- **Do not block the ventilation opening or slots on the cover.**

To prevent the appliance temperature from rising, place the appliance at least 5 cm (2 inches) away from the wall.

- **Do not drop metallic parts through slots.**

This could permanently damage the appliance. Turn the power off immediately and refer servicing to qualified service personnel.

- **Do not attempt to disassemble the appliance.**

To prevent electric shock, do not remove screws or covers.

There are no user-serviceable parts inside. Refer maintenance to qualified service personnel.

- **Handle the appliance with care.**

Do not strike or shake, as this may damage the appliance.

- **Do not expose the appliance to water or moisture, nor try to operate it in wet areas.**

Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture can damage the appliance and also cause electric shock.

- **Do not use strong or abrasive detergents when cleaning the appliance body.**

Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently.

- **Do not operate the appliance beyond its specified temperature, humidity or power source ratings.**

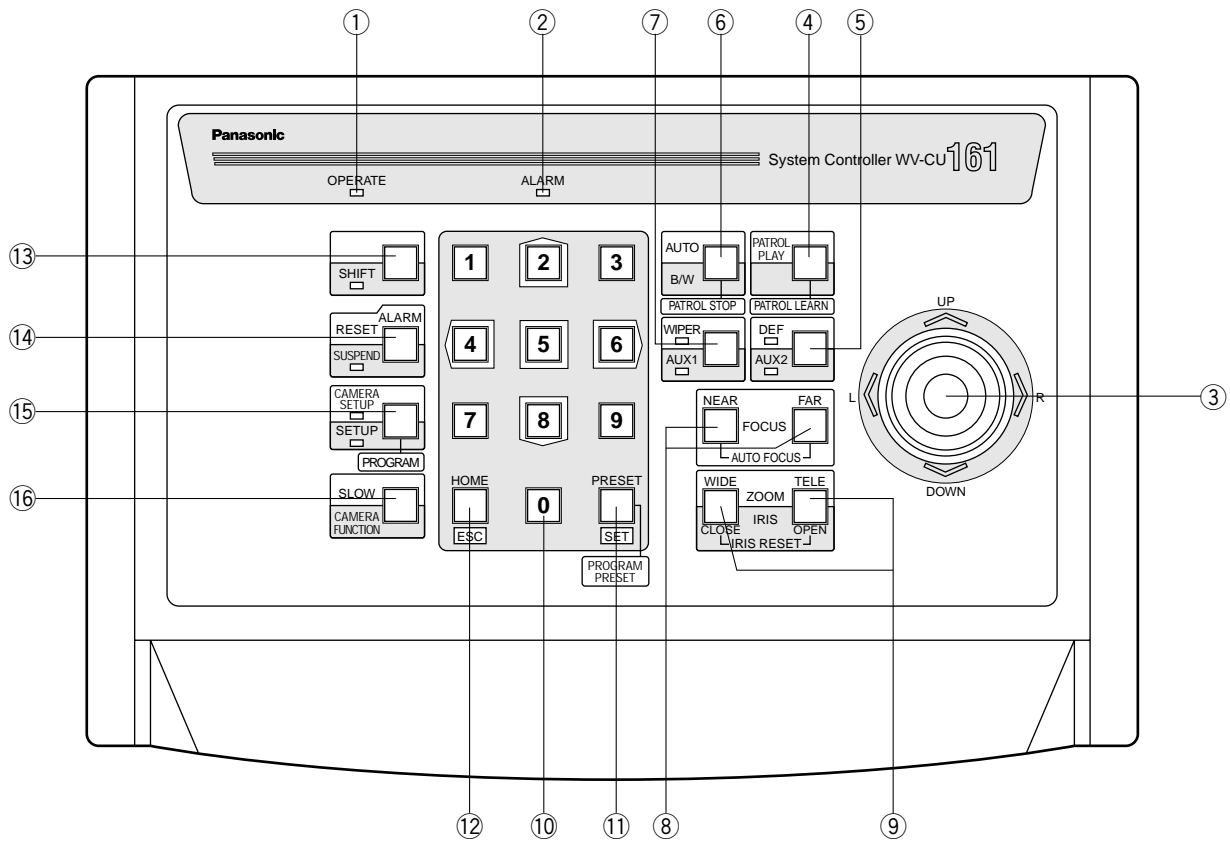
Do not use the appliance in an extreme environment where high temperature or high humidity exists.

Use the appliance at temperatures within -10°C - $+50^{\circ}\text{C}$ (14°F - 122°F) and a humidity below 90 %.

The input power source for this appliance is 120 V AC 60 Hz.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

■ Front View



① Operate Indicator (OPERATE)

Lights up while the power of the System Controller is turned on.

② Alarm Indicator (ALARM)

Blinks when an alarm is activated. The blink changes to steady light when the alarm is automatically reset. To turn the indicator off, press the ALARM RESET button.

③ Joystick Controller (UP/DOWN/L/R)

This joystick is used to manually operate the Pan/Tilt Head, or move the cursor in the Setup menu on the monitor screen. Keeping the Joystick Controller pushed down in the desired position will keep the cursor moving continuously in the Setup menu. (See page 17.)

UP: Upward
DOWN: Downward
L: Left
R: Right

④ Patrol Play/Patrol Learn Button (PATROL PLAY/PATROL LEARN)

Pressing this button will turn on the camera patrol play function. Pressing this button while holding down the CAMERA SETUP/SETUP/PROGRAM button will start to program the camera patrol learning function.

⑤ Defroster/Auxiliary 2 Button (DEF/AUX2)

Pressing this button will activate the housing defroster of cameras provided with this feature. Pressing it after pressing the SHIFT button will turn on the AUX2 button controlling accessories connected to the camera or the specified receiver. The LEDs next to the button are each lit while the defroster or AUX2 mode is selected.

⑥ **Auto Panning/Black and White Selection/Patrol Stop Button (AUTO/B/W/PATROL STOP)**

AUTO: Pressing this button will activate the auto panning function of cameras provided with this feature.

B/W: Pressing this after pressing the SHIFT button will display the picture in black and white on the monitor.

PATROL STOP: Pressing this will stop the programming of the camera patrol learning function.

The following four types of Auto Panning can be selected with numeric buttons 1 to 4, but not all of these types are always available depending on the camera.

For further information, refer to the Operating Instructions for the individual combination cameras.

AUTO PAN ON or Functions set on combination camera: Simply press this button, or press Numeric button 1 followed by this button.

AUTO SORT ON: Press Numeric button 2 followed by this button.

AUTO SEQ ON: Press Numeric button 3 followed by this button.

RANDOM PAN ON: Press Numeric button 4 followed by this button.

⑦ **Wiper/Auxiliary 1 Button (WIPER/AUX1)**

Pressing this button will activate the housing wiper of a camera provided with this feature. Pressing it after pressing the Shift button will turn on the AUX1 button controlling accessories connected to the camera.

The LEDs next to the button are each lit while the wiper or AUX1 mode is selected.

⑧ **Focus Buttons (FOCUS: NEAR/FAR)**

These buttons are used to adjust the lens focus of camera equipped with the specified lens.

When these buttons are pressed simultaneously, the lens focus is set automatically if the specified camera is used.

⑨ **Zoom/Iris Buttons (ZOOM: WIDE/TELE, IRIS: CLOSE/ OPEN)**

These buttons are used for zooming a camera or to close or open the lens iris of a camera equipped with the specified lens.

When these buttons are pressed for approx. 1 sec. or more simultaneously after pressing the SHIFT button, the lens iris is reset to the factory default settings.

⑩ **Numeric Buttons (0-9)**

These buttons are used for numeric input of preset numbers or for executing each parameter on the Camera Setup menu.

⑪ **Preset/Set/Program Preset Button (PRESET/SET/PROGRAM PRESET)**

PRESET: In combination with the Numeric buttons, this button is used to move a specific camera to a preset position.

SET: This button is used to execute the currently highlighted setting in the Setup menu.

PROGRAM PRESET: Pressing this while holding down the CAMERA SETUP/SETUP/PROGRAM button will program a preset position.

⑫ **Home/Escape Button (HOME/ESC)**

HOME: This button is used to return a specific camera to the home position.

ESC: This button is used to escape from the currently highlighted selection and return to the previous menu of the Setup Menu.

⑬ **Shift Button (SHIFT)**

Pressing this button in combination with buttons to which special functions have been assigned will activate these functions.

The LED next to the button is lit when the button is pressed.

The LED next to the button goes off when the button is pressed again.

⑭ **Alarm Reset/Suspend Button (ALARM RESET/SUSPEND)**

Pressing this button while the alarm function is activated will reset the alarm of the system.

Pressing this button will activate the alarm suspension mode after pressing the SHIFT button.

The LED next to the button is lit while alarm suspension mode is selected.

Pressing the button after pressing the SHIFT button again will cancel the alarm suspension mode.

⑮ **Camera Setup/Setup/Program Button (CAMERA SETUP/SETUP/PROGRAM)**

Pressing this button for 2 seconds or more after pressing the SHIFT button will open the Camera Setup menu. Pressing it in combination with the Numeric buttons will execute the Setup menu of the System Controller. The LEDs next to the button are each lit during the Camera Setup or Setup operation.

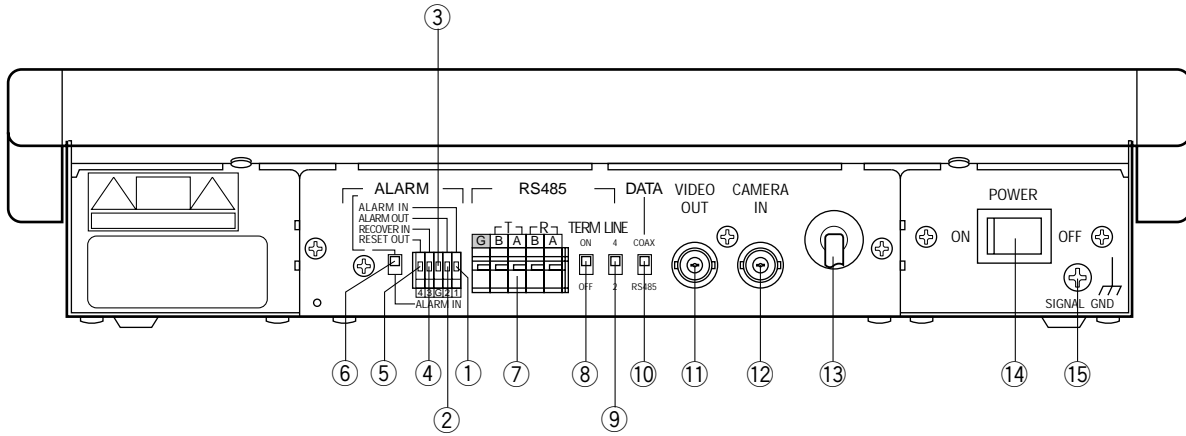
This button is also used to program the camera patrol learning and preset position functions.

⑯ **Slow/Camera Function Button (SLOW/CAMERA FUNCTION)**

If this button is pressed while the joystick controller is moved, pan/tilt speed will decrease.

Pressing it in combination with the numeric buttons after pressing the SHIFT button will execute camera functions.

■ Rear View



① Alarm Input Terminal (ALARM IN)

Accepts the alarm signals from external devices such as alarm sensor when the alarm switch ⑥ is in the upper position.

② Alarm Output Terminal (ALARM OUT)

The alarm output signal is provided at this terminal for the Time Lapse VCR etc. when the alarm switch ⑥ is in the upper position.
(Open collector output, 16 V DC or less, 100 mA or less)

③ Ground Terminal (G)

④ Recover Input Terminal (RECOVER IN)

Accepts the alarm recover signal from the Time Lapse VCR etc. when the alarm switch ⑥ is in the upper position.

⑤ Reset Output Terminal (RESET OUT)

When the Alarm Reset Switch is pressed or the Recover Input Terminal ④ is input to reset the activated alarm, and the alarm switch ⑥ is in the upper position, the alarm reset signal for the peripherals is provided at this terminal.

⑥ Alarm Switch (ALARM IN)

Used to select the alarm mode.
When this switch is in the lower position, the terminals ①, ②, ④ and ⑤ above are used for alarm inputs 1 - 4.

⑦ RS-485 Terminal

This terminal is used to exchange control data with the camera site.

⑧ Termination Switch (TERM ON/OFF)

This switch is used to terminate the RS-485 terminal.
Normally, keep it in the ON position.

⑨ Line Selection Switch (LINE 4/2)

This switch is used to select either Full-duplex (4-lines) or Half-duplex (2-lines) for the communication lines.

⑩ Data Selection Switch (COAX/RS485)

This switch selects either multiplex coaxial data or RS-485 data from control data with the camera site.

⑪ Video Output Connector (VIDEO OUT)

Video signals from the camera are output from this connector.

⑫ Camera Input Connector (CAMERA IN)

This connector accepts the multiplexed video and control data signal from the specified camera such as WV-CS854, WV-CS654 or WV-CS604 or a specified receiver.

⑬ AC Cord

⑭ Power Switch (POWER ON/OFF)

This switch is used to turn the power of the System Controller on and off.

Note: Turning off this switch will not interrupt the power supply. Disconnect the AC cord or turn off the circuit breaker when the controller is not used for a long time.

⑮ Signal Ground Terminal (SIGNAL GND)

SETUP

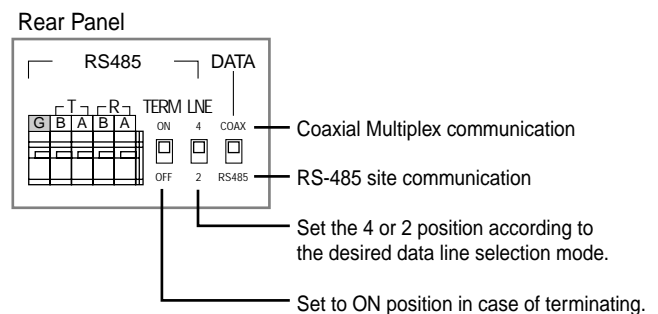
The WV-CU161 can be programmed by setting switches or from the interactive Setup menu as described below.

1. DIP Switch Setting (See page 10)
2. Data Switch Setting
For setting the mode of communication between the WV-CU161 and the combination camera.
3. Alarm Switch Setting
For setting up the alarm terminal. Turn off the power before setting this switch.
4. Setup of WV-CU161
Display the Setup menu (see page 17) to setup the WV-CU161.

■ Data Switch Setting

Set this switch to specify the mode of communication between the WV-CU161 and a connected combination camera.

- Coaxial Multiplex communication via a coaxial cable
In this mode, control signals transmitted to the combination camera are multiplexed with the video signals. Allows control of a camera installed at a distance of up to 900 m (3 000 ft) from the WV-CU161 via a single coaxial cable (When using RG-59U, BELDEN 9259 or equivalent cable).
- RS-485 site communication
In this mode, control signals transmitted to the combination camera are separated into video signals and control signals. Allows control of a camera installed at a distance 1 200 m (4 000 ft) or more from the WV-CU161 via an interface unit such as an AV Codec.
Note: Keep the power switch in the off position while setting each switch (DATA, TERM, LINE). The switch setting will not take effect if the power is on.



■ Alarm Switch Setting

● For Using Alarm Input/Output Terminal and Alarm Recovery Input/Output Terminal

Place the Alarm Switch in the upper position for the following uses:

- Connection with the Time Lapse VCR.
- Transmitting the alarm signal to external devices.
- Resetting the alarm signal from external devices.

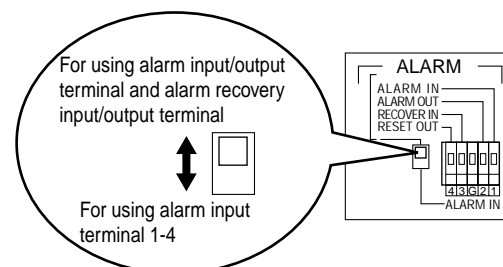
● For Using Alarm Input Terminals 1-4

Place the Alarm Switch in the lower position to use alarm input terminals 1-4.

This allows input of up to four alarm signals into the WV-CU161.

Also allows programming the alarm switch to activate four preset positions for a connected combination camera.

- Note:** Keep the power switch in the off position while setting the alarm switch. The switch setting will not take effect if the power is on.



CONNECTIONS

Check the DIP switch settings before connecting this controller. They need to be changed only if you want to change the system settings.

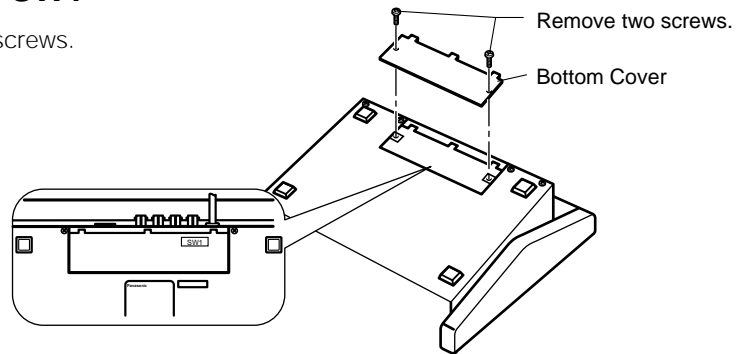
The following setting procedure should be made by qualified service personnel or system installers.

■ DIP Switch Setting

Caution: Unplug the AC cord before changing any DIP switch setting.

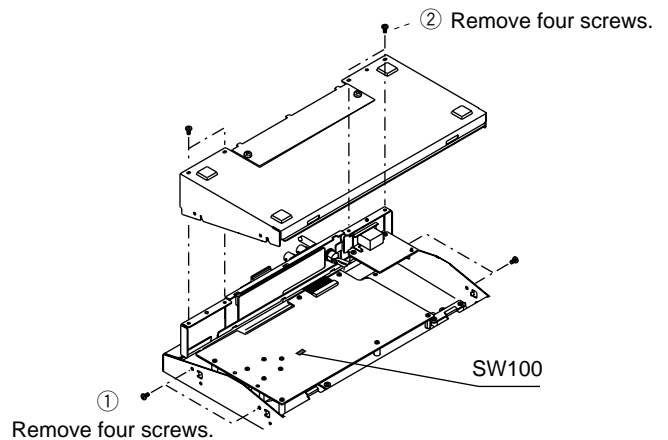
● Removing the Bottom Cover for SW1

1. Take off the bottom cover by removing the two screws.



● Removing the Bottom Panel for SW100

1. Take off the side panels by removing the four screws.
2. Take off the bottom panel by removing the 8 screws.



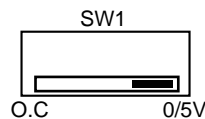
● SW1

SW1 lets you choose 0/5V or open collector (O.C.) for the alarm recover output signal.

0/5V: +5 V DC approx. 500 m sec.

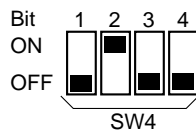
Open Collector (O.C.): 16 V DC 100 mA max.

The initial factory setting is 0/5V.



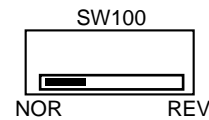
● SW4

Confirm that SW4 on the board is set as shown below. This switch is used only for factory tests. Do not change this switch setting.



● SW100

SW100 lets you choose the mode for displaying characters on the monitor.



NOR: White with Black border



REV: Black with White border

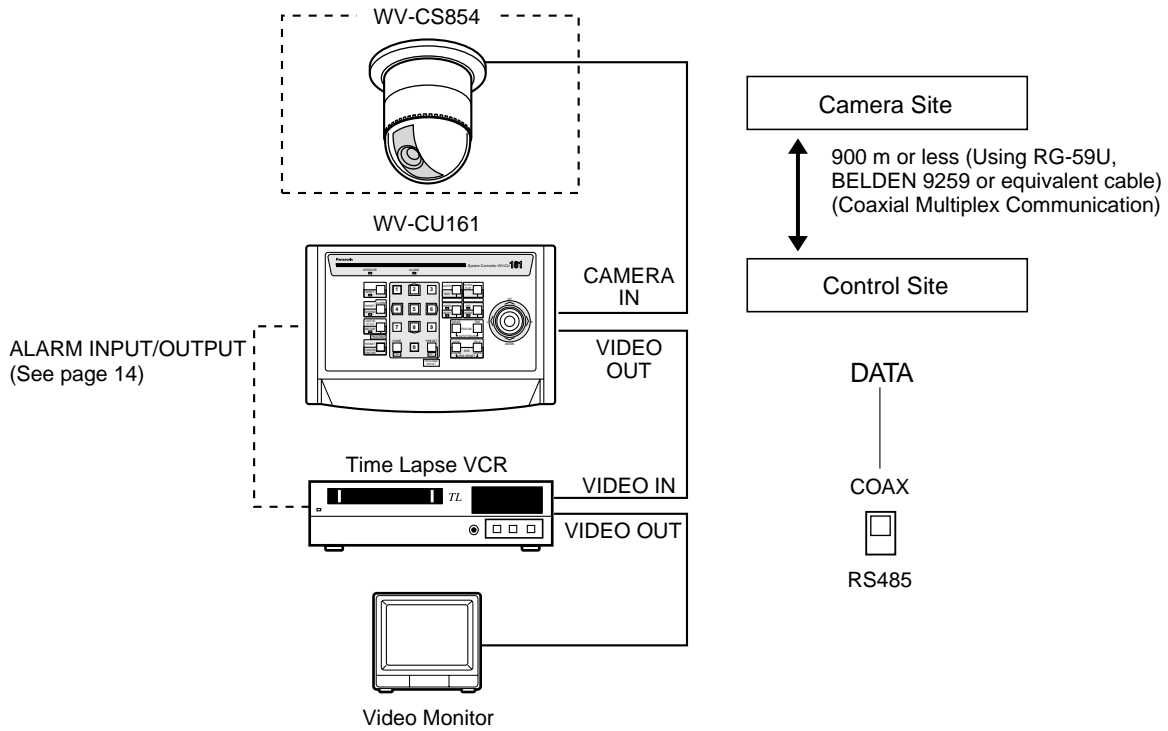


The initial factory setting is NOR.

SYSTEM CONNECTION

The WV-CU161 can be connected with a camera, a video monitor and a Time Lapse VCR. A typical connection example is shown below.

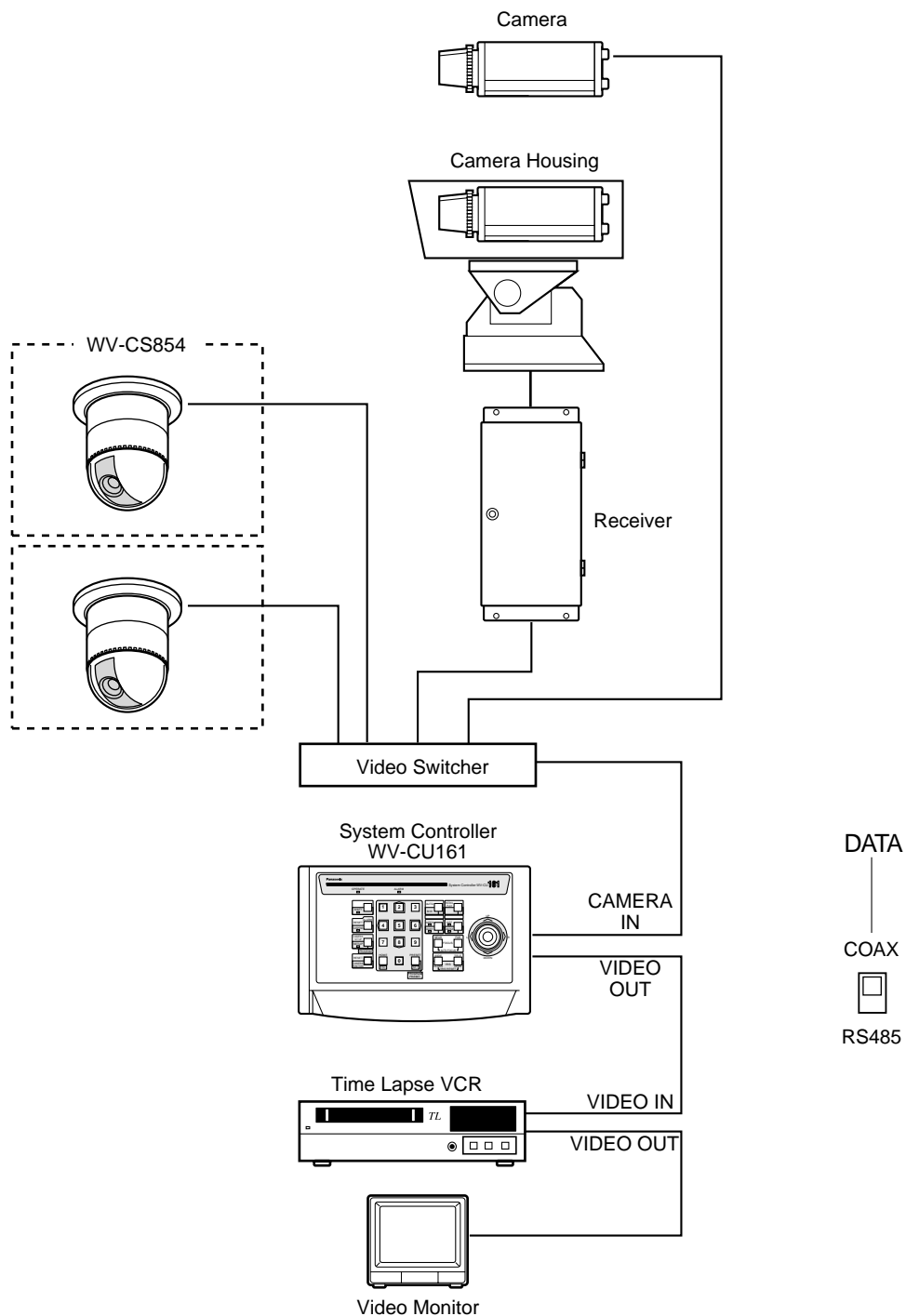
■ Basic System Connection



Note: Refer to the operating instructions of each system component for connection and operation.

■ Connection with a Video Switcher

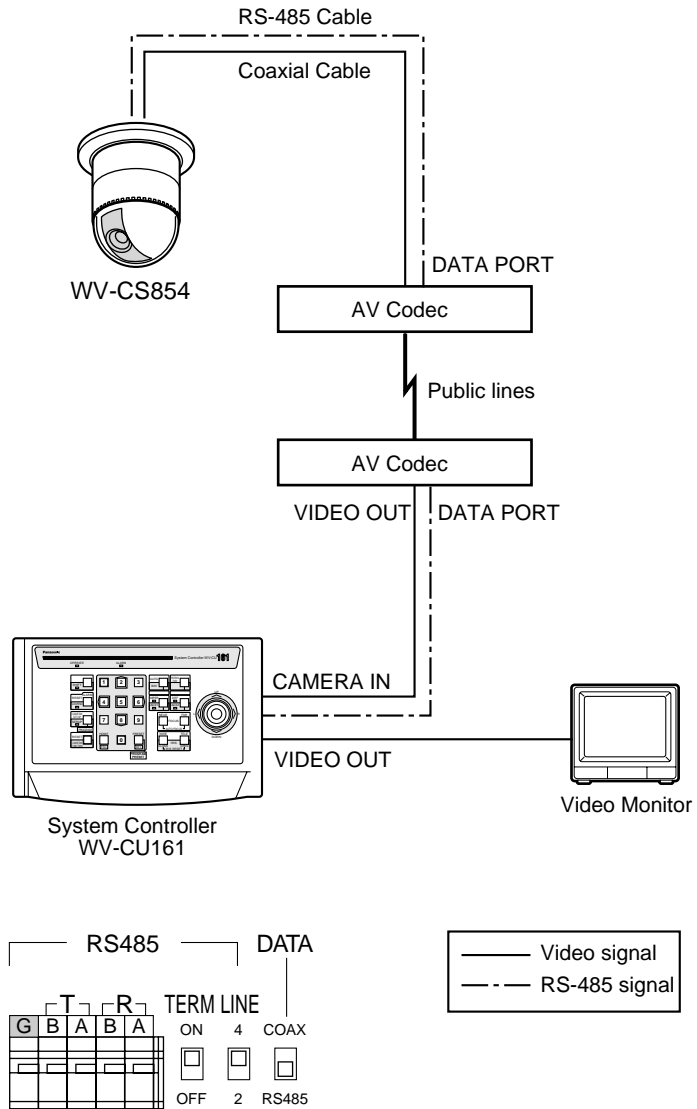
Connected with a video switcher, the WV-CU161 allows you to control multiple combination cameras.



Notes:

- Only the camera of the channel selected the Video Switcher can be controlled by the WV-CU161. Two or more cameras cannot be controlled simultaneously. It is not possible to operate two or more cameras at the same time during alarm activated control.
- Refer to the operating instructions of each system component for connection and operation.

■ RS-485 Site Communication Connection via Codec for Camera Distance of 1 200 m (4 000 ft) or More



Notes:

- Refer to the operating instructions of each system component for connection and operation.
- If public line is busy, it may cause instability of the system operation.

■ Connection with a Time Lapse VCR

Connect the time lapse VCR as shown in the example below.

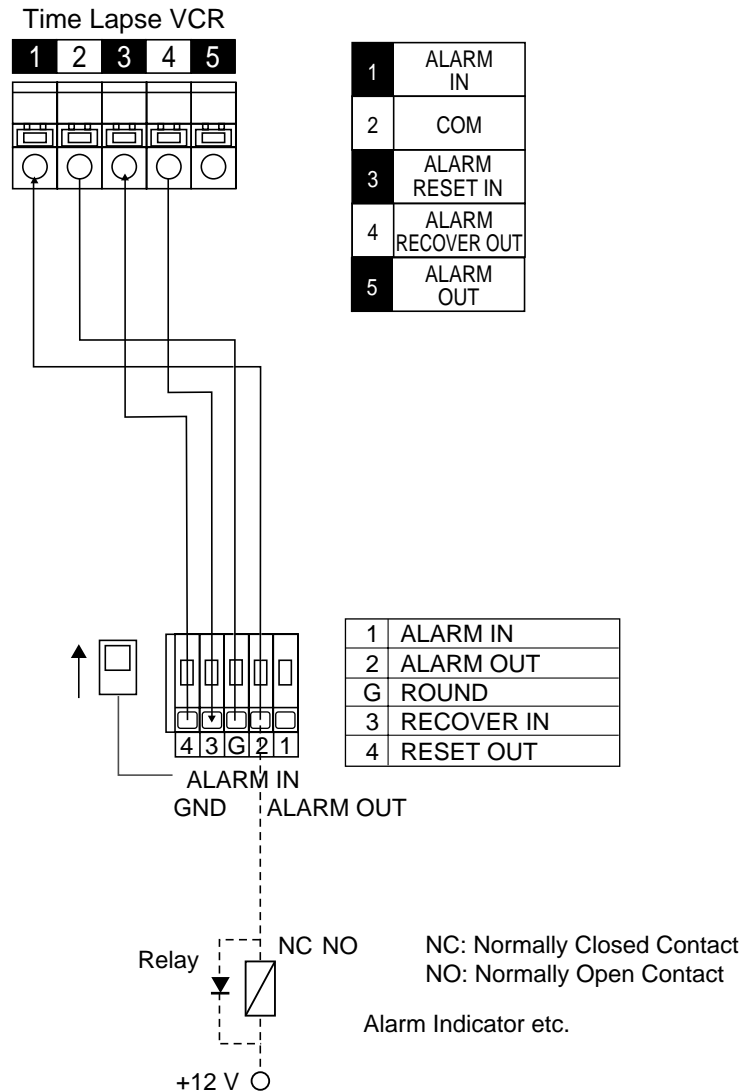
Make sure the polarity of the buzzer matches the terminal.

Connect the positive (+) terminal of the buzzer to the Alarm Output Terminal.

The Alarm Output Terminal is an Open Collector terminal with a capacity of 16 V DC, 100 mA or less.

(1) Connect the buzzer as shown below if its rating lies within the capacity of the Alarm Output Terminal.

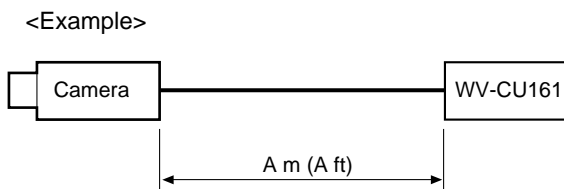
(2) Use an external relay unit as shown below if the buzzer rating exceeds the capacity of the Alarm Output Terminal.



■ Cable-loss Compensation Setting

The maximum allowable cable length of the system is approximately 900 m (3 000 ft).

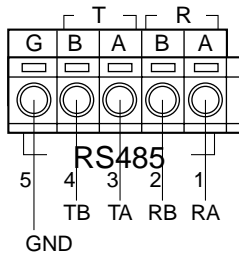
See the diagram below and setup the cable-loss compensation switch for each unit accordingly. (See page 19)



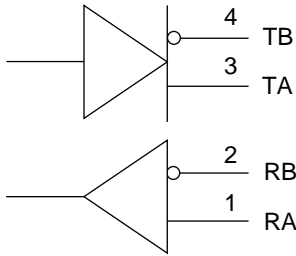
Cable length (with RG-59U BELDEN 9259 or equivalent) Unit: m (ft)	Cable compensation parameter in WV-CU161 Setup menu
0 (0) ≤ A < 400 (1 300)	→ S
400 (1 300) ≤ A < 700 (2 300)	→ M
700 (2 300) ≤ A < 900 (3 000)	→ L

■ RS-485 Terminal

Control data is transmitted and received to and from other peripherals. Use a data grade, double-shielded, twisted pair cable, suitable for the RS-485. Cable length may be extended up to 1 200 m (4 000 ft).

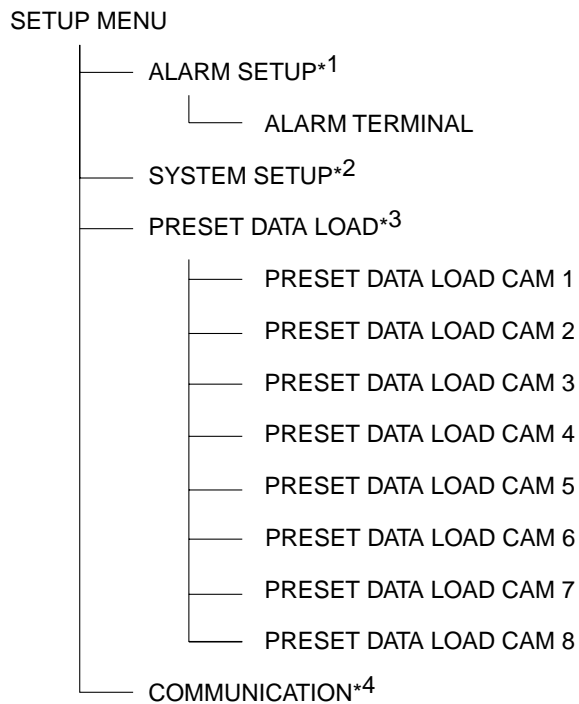


● Internal Diagram



SETUP MENU

The Setup menu has four main submenus: Alarm Setup, System Setup, Preset Data Load, and Communication. All of these main menus are further divided into submenus.



*1 To set the alarm operation mode when an alarm is activated.

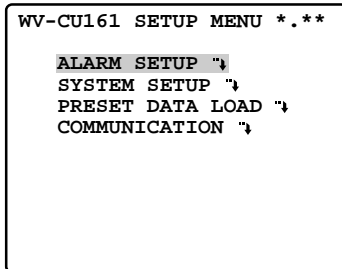
*2 To set the system mode.

*3 To download the preset data from a combination camera.
To upload the preset data after downloading it.

*4 To setup RS-485 site communication. This item appears only for RS-485 site communication.
In case of coaxial multiplex communication, it does not appear.

■ Displaying the Setup Menu

1. Check that the camera, the monitor and peripherals are connected correctly and securely.
2. Switch all the system components on.
The operate indicator of the WV-CU161 lights up.
The picture of the camera appears on the monitor.
3. Press the SHIFT button, and then press the CAMERA SETUP/SETUP button for 2 seconds or more.
4. The SETUP MENU appears.

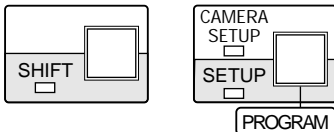


Note: The COMMUNICATION parameter appears when the data switch is set to RS-485 (See page 9).

■ Key Functions on the Setup Menu

SHIFT button + CAMERA SETUP/SETUP/PROGRAM button:

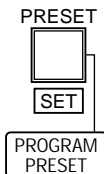
To display the program menu. Press CAMERA SETUP /SETUP button for 2 seconds or more after pressing the SHIFT button.



PRESET/SET/PROGRAM PRESET button:

To execute modes and parameters.

To enter a submenu for an item marked ↵.



HOME/ESC button:

To return to the previous menu.



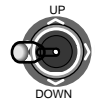
• Joystick Controller



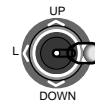
Up: To select modes.



Down: To select modes.



Left: To decrease the parameter.



Right: To increase the parameter.

• Closing Setup Menu

Press the SHIFT button, and then press the PRESET/SET/PROGRAM PRESET button for 2 seconds or more.

The LED next to the button goes off.

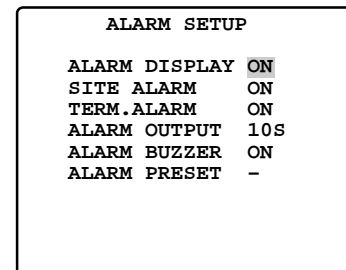
Notes:

- When the power of the WV-CU161 is turned off before completing the setup, the new values do not become valid. The saved values remain valid until new values are saved.
- After parameters have been changed, return to the Setup menu, and then turn the power off.

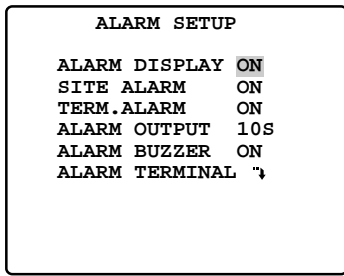
■ Alarm Setup

1. Display the Setup menu.
2. Select ALARM SETUP by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button.
The ALARM SETUP menu appears on the monitor as shown below.

- For using alarm input/output terminal and alarm recover input/output terminal



- For using alarm input terminals 1-4



(1) Alarm Display Setting

This item lets you select whether or not the message ALARM on the monitor when the alarm is activated.

1. Display the ALARM SETUP menu.
2. Select ALARM DISPLAY by moving the joystick up or down.
3. To have ALARM displayed, select ON for the ALARM DISPLAY parameter. Otherwise select OFF by moving the joystick to the right or left.
The initial factory setting is ON.

Note: The display time differs depending on (4) Alarm Output Setting.

(2) Site Alarm Setting

This item lets you enable or disable the camera site alarm.

1. Display the ALARM SETUP menu.
2. Select SITE ALARM by moving the joystick up or down.
3. Select SITE ALARM ON or OFF by moving the joystick to the right or left.
The initial factory setting is ON.

(3) Terminal Alarm Setting

This item lets you enable or disable the alarm signal from the alarm connector.

1. Display the ALARM SETUP menu.
2. Select TERM.ALARM by moving the joystick up or down.
3. Select TERM.ALARM ON or OFF by moving the joystick to the right or left.
The initial factory setting is ON.

(4) Alarm Output Setting

This item lets you select an alarm operation duration when the alarm is activated.

It determines the following. (The selected duration applies to each alarm operation.)

- The length of time that ALARM is displayed on the monitor (ALARM DISPLAY ON mode).
- The length of time the alarm is output to external devices (from the ALARM OUTPUT connector).
- The length of time the buzzer sounds (ALARM BUZZER ON mode).

1. Display the ALARM SETUP menu.
2. Select ALARM OUTPUT by moving the joystick up or down.

3. Select the desired alarm output duration, 1S-30S, 40S 50S 1MIN 2MIN, 3MIN, 4MIN, 5MIN EXT, or OFF by moving the joystick to the right or left.

The initial factory setting is 10S.

EXT: The alarm signal continues to be output from the alarm output connector till the alarm is reset. The alarm is not automatically reset.

1S-5MIN: The alarm signal is supplied from the alarm output connector only for the set time. The alarm is automatically reset after the set time. (The ALARM indicator changes from blinking to steady light.)

OFF: No alarm output signal is supplied. (The alarm is deactivated.)

(5) Alarm Buzzer Setting

This item lets you select whether or not the alarm buzzer sounds when the alarm is activated.

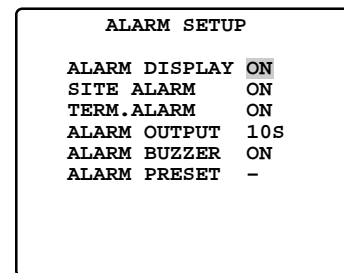
1. Display the ALARM SETUP menu.
2. Select ALARM BUZZER by moving the joystick up or down.
3. Select ALARM BUZZER ON or OFF by moving the joystick to the right or left.
The initial factory setting is ON.

Note: The alarm buzzer time differs depending on (4) alarm output setting.

(6) Alarm Preset Setting

This item lets you select picture preset numbers in presetting combination camera positions when the alarm is activated.

- For using alarm input/output terminal and alarm recover input/output terminal.



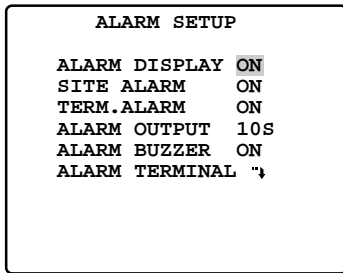
1. Display the ALARM SETUP menu.
2. Select ALARM PRESET by moving the joystick up or down.
3. Move the joystick to the right or left to select the desired preset numbers of the picture on the monitor in the range of 1-64 or [-] if no preset numbers are assigned.
The initial factory setting is - (No assignment).

1-64: Preset numbers

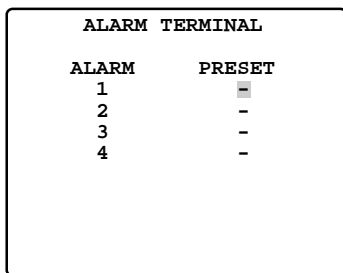
-: No assignment

Note: ALARM PRESET is available only when a combination camera is connected.

- For using alarm input terminals 1-4



1. Display the ALARM SETUP menu.
2. Select ALARM TERMINAL by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button. The ALARM TERMINAL screen appears as shown below.



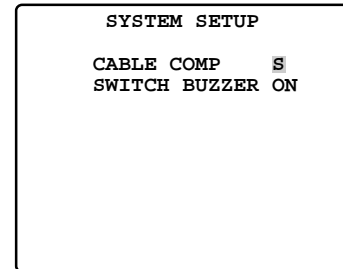
4. Select the alarm terminal number by moving the joystick up or down.
5. Move the joystick to the right or left to select the desired preset numbers of the picture on the monitor in the range of 1-64, or [-] if no preset numbers are assigned. The initial factory setting is - (No assignment).
1-64: Preset numbers
-: No assignment
6. To return to the previous menu, press the HOME/ESC button.

Notes:

- ALARM TERMINAL is available only when a combination camera is connected.
- If the camera has the Preset Alarm ON/OFF mode, set it to OFF.

■ System Setup

1. Display the Setup menu.
2. Select SYSTEM SETUP by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button. The SYSTEM SETUP menu appears on the monitor as shown below.



(1) Cable Compensation Setting

This item lets you select the cable length to compensate for transmission loss.

1. Display the SYSTEM SETUP menu.
2. Select CABLE COMP by moving the joystick up or down.
3. Select the most suitable cable length by moving the joystick to the right or left.

The initial factory setting is S.

S: Less than 400 m (1 300 ft)

M: 400 m (1 300 ft) to 700 m (2 300 ft)

L: 700 m (2 300 ft) to 900 m (3 000 ft)

(When using RG-59U, BELDEN 9259 or equivalent cable)

(2) Switch Buzzer Setting

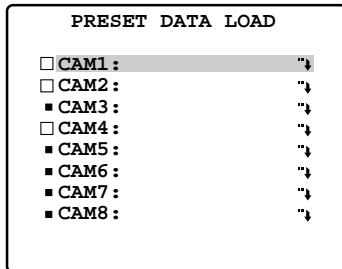
This item lets you select whether or not the switch buzzer sounds when a button is pressed.

1. Display the SYSTEM SETUP menu.
2. Select SWITCH BUZZER by moving the joystick up or down.
3. Select ON or OFF mode by moving the joystick to the right or left.

The initial factory setting is ON.

■ Preset Data Load Setting

1. Display the Setup menu.
2. Select PRESET DATA LOAD by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button.
The PRESET DATA LOAD screen appears on the monitor as shown below.

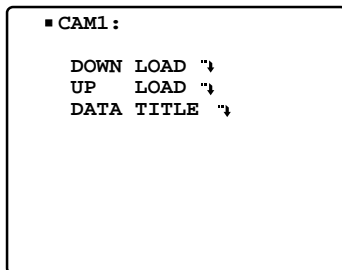


□ : Data saved.

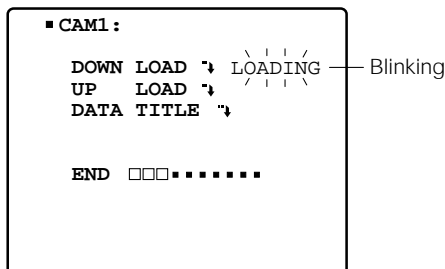
■ : No Data saved. (CAM1 - CAM8 of the initial factory setting are marked all ■.)

(1) Download Setting

1. Display the PRESET DATA LOAD menu.
2. Select a camera number between CAM1 and CAM8 by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button.
4. The camera number and download menu appear on the monitor as shown below.



5. Select DOWN LOAD by moving the joystick up or down.
6. Press the PRESET/SET/PROGRAM PRESET button.
Downloading starts.



7. While downloading, the word LOADING blinks on the right.
 - changing to □ in the progress bar indicates the progress of downloading.
8. When downloading is completed, END appears on the right. The progress bar disappears.
9. Editing the DATA TITLE.
For further information, refer to (3) Data Title Setting.

Notes:

- The preset data of up to 8 cameras can be downloaded.
- Downloading time is approx. 2 minutes per camera. When downloading is completed, the combination camera such as WV-CS854, WV-CS654 or WV-CS604 will move to the Preset Position.
- Any previous preset data is overwritten by the downloaded data.
- To terminate downloading, press the HOME/ESC button while downloading. ERROR 3 appears. The progress bar disappears.
- END and error messages remain on the menu until the next operation is performed.
- In case of RS-485 Site Communication mode, check that the unit address is the same as set on the combination camera. If the numbers do not agree, the camera cannot be operated.
Therefore, preset data cannot be downloaded.

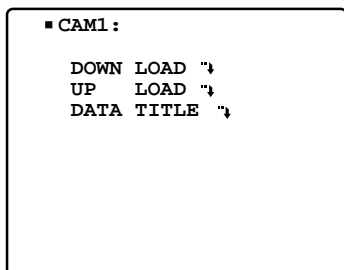
• Error Display

When an error occurs during Down Loading, the following messages appear on the monitor.

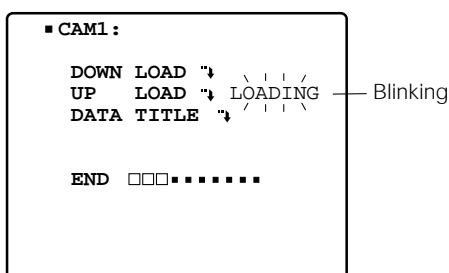
Message	Cause	Note
ERROR 2	Lack of memory	Memory capacity was exceeded while downloading.
ERROR 3	Causes except above	Downloading not possible for some reason other than the above.

(2) Upload Setting

1. Display the PRESET DATA LOAD menu.
2. Select a camera number between CAM1 and CAM8 by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button.
4. The camera number and upload menu appear on the monitor as shown below.



5. Select UP LOAD by moving the joystick up or down.
6. Press the PRESET/SET/PROGRAM PRESET button. Uploading starts.



7. While uploading, the word LOADING appears on the right.
 - changing to □ in the progress bar indicates the progress of uploading.
8. When uploading is completed, END appears on the right. The progress bar disappears.

Notes:

- The preset data of up to 8 cameras can be uploaded.
- Uploading time is approx. 2 minutes per camera. When uploading is completed, the combination camera such as WV-CS854, WV-CS654 or WV-CS604 will move to the Preset Position.
- Upload only preset data. Make any other settings from the Camera Setup menu.
- The camera picture may change as a result of uploading data. Access the Camera Setup menu to make the necessary settings.
- Any previous preset data is overwritten by the uploaded data.
- To terminate uploading, press the HOME/ESC button while uploading. ERROR 3 appears. The progress bar disappears.
- END and error messages remain on the menu until the next operation is performed.

- In case of RS-485 Site Communication mode, check that the unit address is the same as set on the combination camera. If the numbers do not agree, the camera cannot be operated. Therefore, preset data cannot be uploaded.

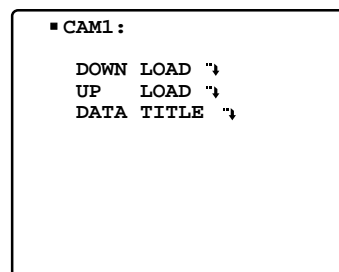
• Error Display

When an error occurs during uploading, the following messages appear on the monitor.

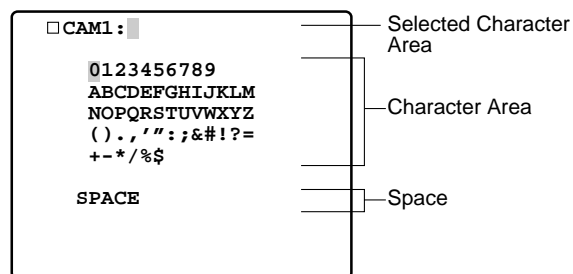
Message	Cause	Note
ERROR1	Incompatibility	Incompatibility detected between transmission data and camera model while uploading.
ERROR 3	Causes except above	Uploading not possible for some reason other than the above.

(3) Data Title Setting

1. Display the PRESET DATA LOAD menu.
2. Select the desired CAM1-CAM8 position by moving the joystick up or down.
3. Press the PRESET/SET/PROGRAM PRESET button.
4. The camera number and data title menu appear on the monitor as shown below.



5. Select DATA TITLE by moving the joystick up or down. The DATA TITLE menu appears as shown below.



6. Move the cursor to the desired character in the character area by moving the joystick upward, downward, right or left.
7. Press the PRESET/SET/PROGRAM PRESET button.
8. Repeat procedure 6 to 7 until all characters are edited. Up to 12 characters can be selected.

- To return to the preset data menu, press the HOME/ESC button after completing the data title setting.

To replace a specific character

- Use the joystick to shift the cursor to the selected character area.
- Move the cursor to the character to be replaced by moving the joystick right or left.
- Move to shift the cursor to the character area by moving the joystick up or down, and move the cursor to the desired character by moving the joystick up, down, right or left.
- Press PRESET/SET/PROGRAM PRESET button.
The selected character is replaced with the corrected character area.

To delete a specific character

A character is deleted by inserting a blank space.

- Use the joystick to shift the cursor to the selected character area.
- Move the cursor to the character to be deleted by moving the joystick right or left.
- Move the cursor to the SPACE position by moving the joystick up or down.
- Press the PRESET/SET/PROGRAM PRESET button.
[•] (space mark) appears in place of the deleted character.

■ Communication Setting

Note: The COMMUNICATION menu appears when the Data Switch is set to RS-485.

COMMUNICATION	
UNIT ADDRESS	1
BAUD RATE	19200
DATA BIT	8
PARITY CHECK	NONE
STOP BIT	1
WAIT TIME	OFF
DELAY TIME	OFF
XON/XOFF	NOT USE

(1) Unit Address Setting

This item lets you set a unit address that is set to the camera for RS-485 communication. After confirming the unit address that is set to the camera, set it up.

- Display the COMMUNICATION menu.
- Select UNIT ADDRESS by moving the joystick up or down.
- Select the unit address assigned to the combination camera in the range of 1 to 96 by moving the joystick to the right or left.
The initial factory setting is 1.

Note: If the unit address is not the same, the camera cannot be operated.

(2) Baud Rate Setting

This item lets you set the baud rate for RS-485 communication.

- Display the COMMUNICATION menu.
- Select BAUD RATE by moving the joystick up or down.
- Select 19200, 9600, 4800 or 2400 bps for the baud rate by moving the joystick to the right or left.
The initial factory setting is 19200 bps.

Notes:

- At a baud rate of 2400 bps, the data response may be unstable when an alarm is reset, for example.
- This setting must be compatible with the peripherals connected.

(3) Data Bit Setting

This item lets you set the number of the data bits for RS-485 communication.

- Display the COMMUNICATION menu.
- Select DATA BIT by moving the joystick up or down.
- Select 7 or 8 bit for the number of data bits by moving the joystick to the right or left.
The initial factory setting is 8 bit.

Note: This setting must be compatible with the peripherals connected.

(4) Parity Check Setting

This item lets you set the parity bit for RS-485 communication.

1. Display the COMMUNICATION menu.
2. Select PARITY CHECK by moving the joystick up or down.
3. Select NONE, EVEN or ODD for parity check by moving the joystick to the right or left.
The initial factory setting is NONE.

Note: This setting must be compatible with the peripherals connected.

(5) Stop Bit Setting

This item lets you set the number of stop bits for RS-485 communication.

1. Display the COMMUNICATION menu.
2. Select STOP BIT by moving the joystick up or down.
3. Select 1 or 2 for the number of stop bits by moving the joystick to the right or left.
The initial factory setting is 1 bit.

Note: This setting must be compatible with the peripherals connected.

(6) Wait Time Setting

This item lets you set the waiting time in milli-seconds (ms) till retry for RS-485 communication.

1. Display the COMMUNICATION menu.
2. Select WAIT TIME by moving the joystick up or down.
3. Select OFF, 100, 200, 400, or 1 000 ms for the wait time by moving the joystick to the right or left.
The initial factory setting is OFF (No retry).

(7) Delay Time Setting

This item lets you set the lowest delay time from the reception of data to reply for RS-485 communication.

1. Display the COMMUNICATION menu.
2. Select DELAY TIME by moving the joystick up or down.
3. Select OFF, 20, 40, or 100 ms for the delay time by moving the joystick to the right or left.
The initial factory setting is OFF.

(8) XON/XOFF Setting

This item lets you set flow control for RS-485 communication.

1. Display the COMMUNICATION menu.
2. Select XON/OFF by moving the joystick up or down.
3. Select NOT USE or USE mode for XON/XOFF by moving the joystick to the right or left.
The initial factory setting is NOT USE.

OPERATING PROCEDURES

CAMERA CONTROL FUNCTIONS

It is necessary to setup the camera before using the camera control functions. For further information, refer to the Operating Instructions for the respective combination camera (See page 30). You can also set it up from Camera Setup menu if you operate a system.

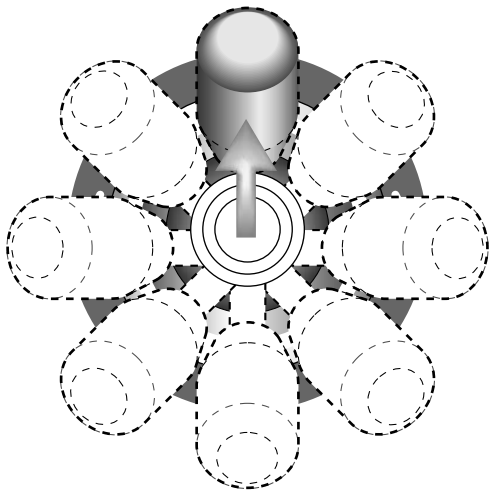
■ Pan/Tilt Control

The following function is available with a combination camera or pan/tilt head.

Move the pan/tilt head in the desired direction using the joystick.

The camera can be moved in eight directions.

Joystick



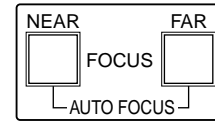
To move the pan/tilt head slowly, move the joystick while holding down the **SLOW/CAMERA FUNCTION** button.

Note: The SLOW/CAMERA FUNCTION button cannot be used in the camera or pan/tilt head which is not provided with 8-steps speed.

■ Lens Control

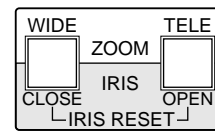
The following functions are available with cameras provided with controllable lens.

1. Press the **FOCUS NEAR** or **FOCUS FAR** button to adjust the lens focus while watching the monitor.



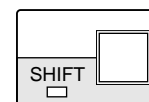
If you are using a camera with an auto focus feature, the lens focus can be automatically adjusted by pressing the **FOCUS NEAR** and **FOCUS FAR** buttons simultaneously.

2. Press the **ZOOM TELE** button to optically bring the object closer, or press the **ZOOM WIDE** button to optically widen the scene.



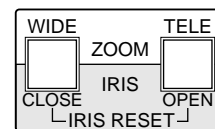
Focal length differs depending on the lens installed on the camera.

3. Press the **SHIFT** button.



4. Press the **ZOOM/IRIS** buttons to adjust the lens focus while watching the monitor.

If the **IRIS CLOSE** and **IRIS OPEN** buttons are pressed for approx. 1 sec. or more simultaneously, the iris is reset to the default.



■ Operation of Combination Camera

It is necessary to setup the combination camera before operating it. For further setup information, refer to the Operating Instructions for the combination camera (See page 30). You can also set it up from the Camera Setup menu if you operate a system.

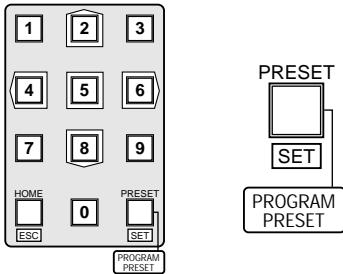
● Changing to Picture at Preset Position

The following function is available only with cameras provided with the preset function.

The preset function makes the combination camera move to the programmed preset position.

It is necessary to program preset positions for the combination camera beforehand.

Select a preset number using the numeric buttons, and press the **PRESET/SET/PROGRAM PRESET** button.



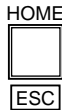
The combination camera moves to the programmed preset position, and the picture of the camera in that position appears on the monitor.

● Changing to Picture at Home Position

The following function is available only with cameras provided with the preset function.

It is necessary to program the home position for the combination camera beforehand.

Press the **HOME/ESC** button to move the combination camera to the home position.



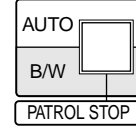
The camera returns to the home position and the picture at that position appears on the monitor.

● Auto Pan

The following functions are available only with cameras provided with the pan/tilt head specified for this operation.

It is necessary to program auto pan function for the combination camera beforehand.

1. Press the **AUTO/B/W/PATROL STOP** button.



The auto panning function programmed for the combination camera is activated.

The picture appears on the monitor.

The following functions differ depending on the combination camera.

AUTO PAN ON or functions set in the combination camera: Press Numeric button 1 followed by this button.

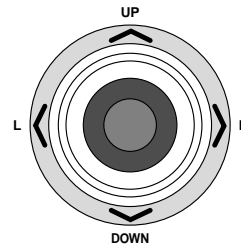
AUTO SORT ON: Press Numeric button 2 followed by this button.

AUTO SEQ ON: Press Numeric button 3 followed by this button.

RANDOM PAN ON: Press Numeric button 4 followed by this button.

For further information, refer to the Operating Instructions for the combination camera.

2. To stop auto pan, move the joystick.



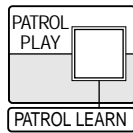
● Camera Patrol Function

The following function is available with combination cameras provided with the camera patrol function.

The camera patrol function enables the combination camera to learn joystick movements and zooming operation.

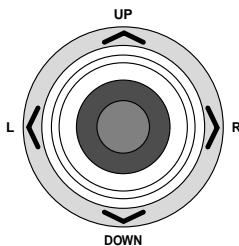
To program the camera patrol learning function, see page 31.

1. Press the **PATROL PLAY/PATROL LEARN** button to move the combination camera according to the data saved in the memory.



The camera patrol picture appears on the monitor.

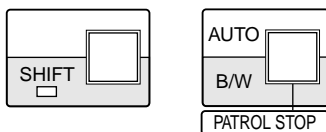
2. To stop the patrol play function, move the joystick.



● Changing from Color to Black and White Picture

The following function is available with cameras provided with the color-black and white switching function specified for this operation.

1. Press the **AUTO/B/W/PATROL STOP** button, after pressing the **SHIFT** button, to change from color to black and white picture. The black and white picture appears on the monitor.



2. To change back from black and white to color picture, press the **AUTO/B/W/PATROL STOP** button after pressing the **SHIFT** button.



Notes:

- This function is disabled if the change to black and white picture function is set to AUTO in the Camera Setup menu. In case of using this function, change the parameter in the Camera Setup menu.
- It is invalid unless this operation of the color-black and white switching function is completed in the camera side.

● Camera Functions

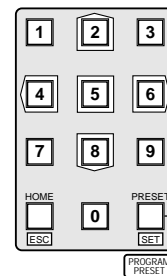
The following functions are available with the combination camera. Those camera functions can be called up by numbers.

For further information, refer to the Operating Instructions for the camera. Examples of camera functions are described as below.

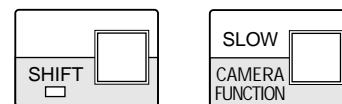
• Super Dynamic II

The following function is available only with cameras provided with the Super Dynamic II function.

1. Press numeric buttons **8** and **4**.



2. Press the **SLOW/CAMERA FUNCTION** button after pressing the **SHIFT** button.

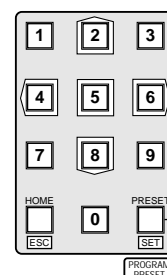


3. To cancel the Super Dynamic II function, press numeric buttons **8** and **5**.

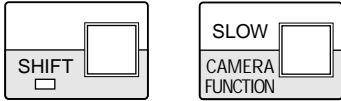
• Electronic Shutter

The following function is available only with cameras provided with the electronic shutter feature.

1. Press numeric buttons **1**, **7** and **1**.



2. Press the **SLOW/CAMERA FUNCTION** button after pressing the **SHIFT** button.

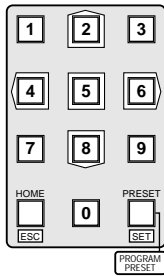


3. To cancel the electronic shutter function, press numeric buttons **1, 7** and **2**.
4. To increase electronic shutter speed, press numeric buttons **1, 7** and **3**.
5. To decrease electronic shutter speed, press numeric buttons **1, 7** and **4**.

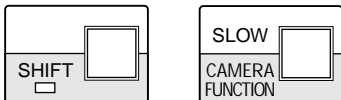
- **Automatic Gain Control**

The following function is available only with cameras provided with the AGC feature.

1. Press numeric buttons **1, 7** and **5**.



2. Press the **SLOW/CAMERA FUNCTION** button after pressing the **SHIFT** button.

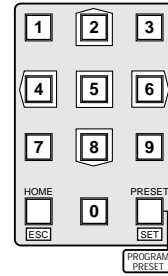


3. To cancel the AGC function, press numeric buttons **1, 7** and **6**.

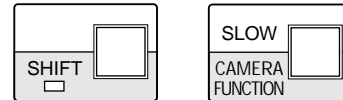
- **Electronic Sensitivity Enhancement**

The following function is available only with cameras provided with the electronic sensitivity function.

1. Press numeric buttons **1, 7** and **7**.



2. Press the **SLOW/CAMERA FUNCTION** button after pressing the **SHIFT** button.

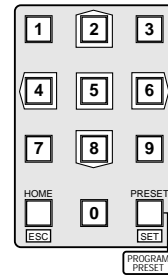


3. To cancel the electronic sensitivity function, press numeric buttons **1, 7** and **8**.
4. To increase electronic sensitivity, press numeric buttons **1, 7** and **9**.
5. To decrease electronic sensitivity, press numeric buttons **1, 8** and **0**.

- **Camera Restart**

The following function is available only with cameras provided with the camera restart function.

1. Press numeric buttons **1, 0** and **0**.



2. Press the **SLOW/CAMERA FUNCTION** button after pressing the **SHIFT** button.

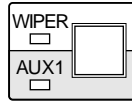


■ Camera Housing Control

● Wiper Control

The following function is available only with the cameras whose housing is provided with the wiper control function.

1. Press the **WIPER/AUX1** button to operate the wiper on the selected camera.



The **WIPER** indicator lights up.

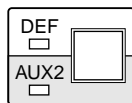
2. To cancel the wiper control function, press the **WIPER/AUX1** button.
The **WIPER** indicator goes off.

Caution: To prevent early wiper wear, be sure to turn off the wiper whenever it is not needed, or before selecting another camera for viewing.

● Defroster Control

The following function is available only with the cameras whose housing is provided with the defroster control function.

1. Press the **DEF/AUX2** button to operate the defroster for the selected camera.



The **DEF** indicator lights up.

2. To cancel the defroster control function, press the **DEF/AUX2** button.
The **DEF** indicator goes off.

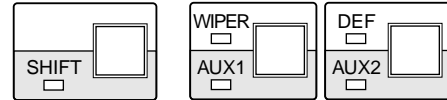
■ External Device Control

● Auxiliary Control

The following function is available only in cases where external devices are connected to the receiver or the camera.

1. Press the **WIPER/AUX1** or **DEF/AUX2** button after pressing the **SHIFT** button, to enable or the user switch on the receiver.

The **AUX1** or **AUX2** indicator lights up.



2. To cancel the auxiliary control function, press the **WIPER/AUX1** or **DEF/AUX2** button after pressing the **SHIFT** button.

The **AUX1** or **AUX2** indicator goes off.

ALARM CONTROL FUNCTIONS

When the WV-CU161 receives an alarm signal from a camera site, an alarm is activated. The WV-CU161 can handle the following alarms.

● Camera Site Alarm

Coaxial Multiplex Communication:

Alarm is multiplexed with video signals from the camera.

RS-485 Site Communication

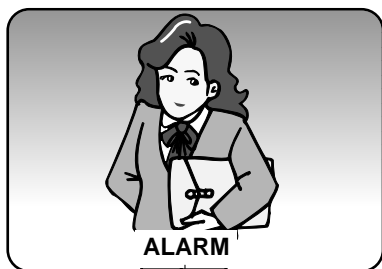
Alarm is transmitted via RS-485.

● Terminal Alarm

Alarm is input via the alarm input terminal on the rear panel from external devices such as a sensor.

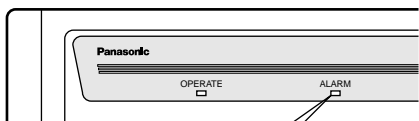
■ Alarm Operation

When the alarm signal is supplied in the Alarm On mode, [ALARM] appears on the monitor screen.



Character display
(ALARM DISPLAY ON)

The alarm indicator starts to blink and the buzzer sounds. (ALARM BUZZER is preset to OFF at the factory.)



ALARM □	<p>Blinking: Alarm has been activated.</p> <p>Light on: Alarm has been reset automatically, or by input signal from external devices (when the alarm switch is in the upper position).</p> <p>Light off: Alarm has been reset manually, or the ALARM RESET/SUSPEND button has been pressed while the alarm indicator is on.</p>
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When the preset number is set at ALARM PRESET or ALARM TERMINAL parameter in ALARM SETUP menu, the camera aims the preset position while an alarm is activated. The alarm signal continues to be output to external devices from the alarm output connector until the alarm is reset.

Notes:

- Alarm display On/Off and Buzzer On/Off mode can be selected. (See page 18)
- The camera or receiver control can be continued even when an alarm is supplied.

■ Alarm Reset

Manual or Automatic resetting can be selected.

When the alarm is reset, [ALARM] disappears from the monitor screen and the alarm reset signal is output from the alarm terminal on the rear panel.

● Automatic Reset

The alarm is reset automatically after the programmed alarm output time has elapsed.

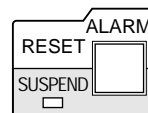
The alarm indicator changes from blinking to steady light, and [ALARM] disappears from the monitor screen.

To turn off the steady light, press the ALARM RESET/SUSPEND button.

Note: Alarm can also be reset by input of the alarm recover signal (no-voltage contact) from the alarm recover input. The reset mode in this case is the same as automatic reset.

● Manual Reset

Press the **ALARM RESET/SUSPEND** button.



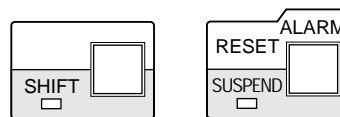
The alarm indicator goes off, [ALARM] disappears from the monitor screen, and alarm is reset.

■ Alarm Suspend

The alarm suspension function allows you to suspend alarm while setting up the camera or the WV-CU161.

1. Press **ALM RESET/SUSPEND** button after pressing the **SHIFT** button.

The **ALM SUSPEND** indicator lights up.



Alarm input is ignored even after the ALM SUSPEND has been set.

2. To cancel the alarm suspend function, press the **ALM RESET/SUSPEND** button after pressing the **SHIFT** button.

The **ALM SUSPEND** indicator goes off.

CAMERA SETUP

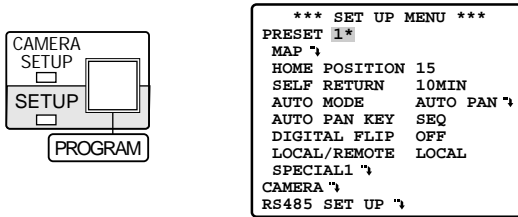
You can use the WV-CU161 to setup the camera from the Camera Setup menu.

For further information, refer to the Operating Instructions for the individual combination cameras.

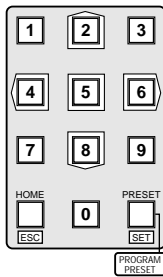
● Camera Setup

1. Press the **CAMERA SETUP/SETUP/PROGRAM** button for 2 seconds or more to access the Camera Setup menu. The **CAMERA SETUP** indicator lights up.

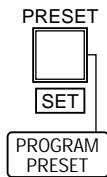
(Example of Camera Setup menu)



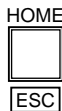
2. Select an item and parameter by pressing numeric buttons **2, 4, 6** and **8**.



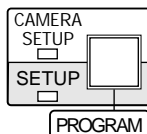
3. Press the **PRESET/SET/PROGRAM PRESET** button to execute the parameter or enter a submenu.



4. To return to the previous menu, press the **HOME/ESC** button.



5. Press the **CAMERA SETUP/SETUP/PROGRAM** button for 2 seconds or more to complete the Camera Setup.



Notes:

- To display the special menu, move the cursor to [SPECIAL] on the Setup menu, and press numeric buttons **4** and **6** simultaneously for 2 seconds or more.
- To restore all defaults, move the cursor to [CAMERA RESET]* on the Setup menu, and press buttons **4, 5** and **6** simultaneously for 2 seconds or more.

* The menu to restore the camera defaults differs depending on the camera: [SPECIAL] for the WV-CS654, [SPECIAL 2] for the WV-CS854, and [END] for fixed cameras, etc.

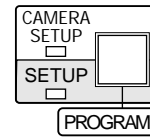
Caution: If camera setup is started using the buttons on the camera, all future operations for setup must be performed with buttons. If camera setup is started using the System Controller, all future operations for setup must be performed using the same controller.

Note: For further information, refer to the Operating Instructions for the selected camera.

● Keys Used in Camera Setup Menu

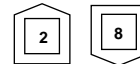
CAMERA SETUP/SETUP/PROGRAM button:

To display a program menu by pressing CAMERA SETUP/SETUP/PROGRAM button 2 seconds or more.

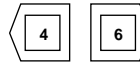


Numeric buttons:

To move the cursor.

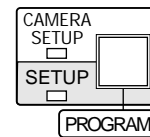


To select modes.



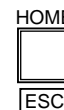
CAMERA SETUP/SETUP/PROGRAM button:

To enter a submenu.



HOME/ESC button:

To return to the previous menu.



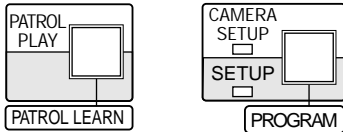
● Camera Patrol Learning for Camera Patrol Operation

The camera patrol learning function can be setup either from the Camera Setup menu or while operating the camera.

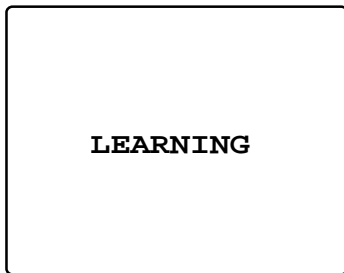
Follow the procedures below to setup the function for a connecting combination camera.

1. Press the **PATROL PLAY/PATROL LEARN** button within approx. 2 seconds while holding down the **CAMERA SETUP/SETUP/PROGRAM** button.

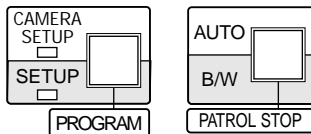
Note: Unless the PATROL PLAY/PATROL LEARN button is pressed within approx. 2 seconds or more after holding down the CAMERA SETUP/SETUP/PROGRAM button, the screen returns to the Setup menu of the WV-CU161 or the Camera Setup menu.



[LEARNING] appears on the monitor.



2. Run the camera through a patrol by using the joystick, zoom buttons etc. This combination camera will learn (memorize) the patrol. Maximum learning time is 30 seconds.
3. To stop the learning process, press the **AUTO/B/W/PATROL STOP** button while holding down the **CAMERA SETUP/SETUP/PROGRAM** button.



[LEARNING] disappears from the monitor.

Learning program

- Pan/Tilt (Joystick)
- Iris (Open/Close)
- Focus (Far/Near)
- Zoom (Tele/Wide)
- Preset Position

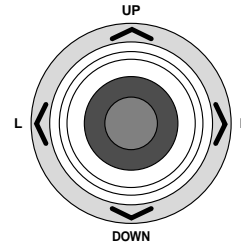
Note: The learning program differs depending on the camera. For further information, refer to the Operating Instructions for the camera to check the operations covered by the learning program before operating the camera.

● Preset Position Setting

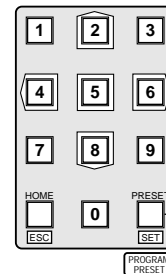
Preset positions can be programmed either from the Camera Setup menu or from the System Controller.

The following functions are available with the respective functions.

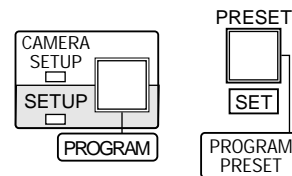
1. Move the combination camera to the desired preset position by using the joystick.



2. Press the numeric button for the preset position to be learned.



3. Press the **PRESET/SET/PROGRAM PRESET** button while holding down the **CAMERA SETUP/SETUP/PROGRAM** button.



The actual camera position at the preset number programmed in procedure 3 is learned as preset.

Preset data program

- Pan/Tilt (Joystick)
- Iris (Open/Close)
- Focus (Far/Near)
- Zoom (Tele/Wide)

Note: The preset data program differs depending on the camera. For further information, refer to the Operating Instructions for the camera to check the operations covered by the preset data program before operating the camera.

INSTALLATION

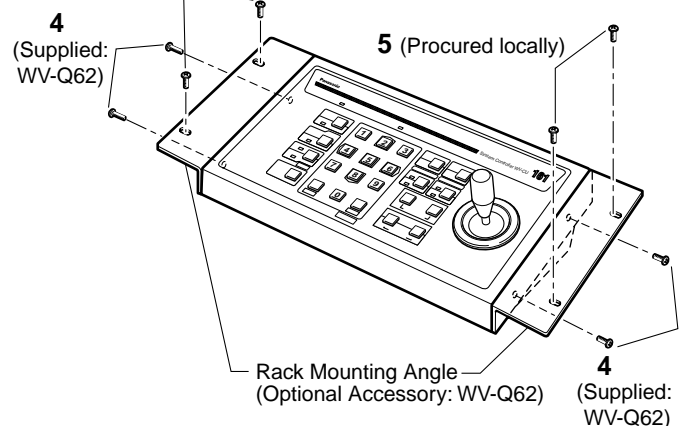
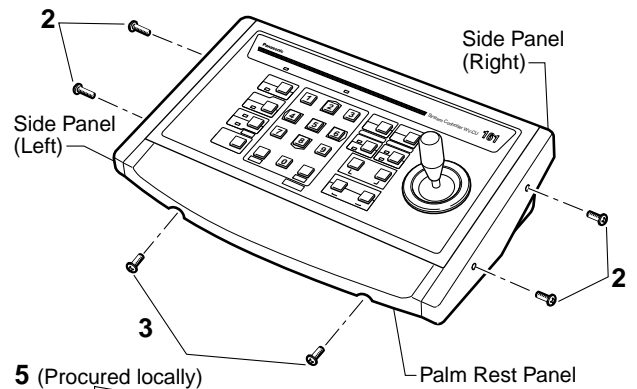
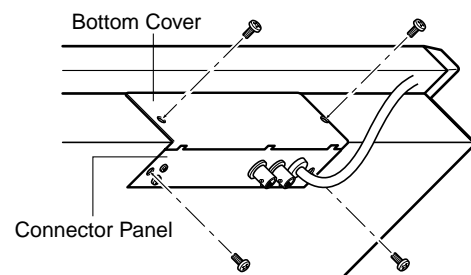
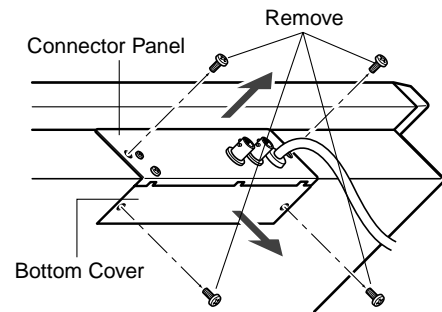
The installation should be made by qualified service personnel or system installers according to the following instructions.

■ Mounting in the Rack

Note: Keep the Power On/Off Switch turned off while making the following installations.

1. Remove the Connector Panel and Bottom Cover from the controller by removing the four screws.
2. Mount the Connector Panel onto the bottom by using the two screws removed above.
3. Mount the Bottom Cover onto the rear by using the two screws removed above.
4. Remove the side panels by removing the four screws.
5. Remove the Palm Rest Panel by removing the two screws.
6. Mount the Rack Mounting Angles onto both sides by using the four screws.
7. Mount the controller in the EIA standard 19-inch rack.

Caution: Always keep the temperature in the rack within 45°C (122°F).



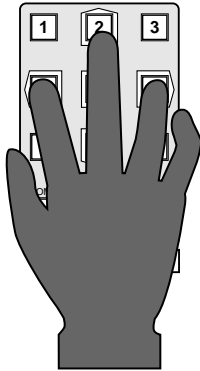
ALL RESET

The System Controller WV-CU161 can be reset to the default settings as follows:

1. Turn off the Power Switch.
2. Turn on the Power Switch while pressing numeric buttons **2**, **4** and **6** simultaneously.

3. When all LEDs light up for a few seconds and go off (except for the Operate Indicator), resetting is completed.

Note: The downloaded data for the camera remains as it is.



SPECIFICATIONS

Power Source:	120 V AC, 60 Hz
Power Consumption:	6 W
Camera Input:	Composite Video Signal: 1 V[p-p]/75 Ω
Alarm Input:	No-voltage contact
Alarm Recover Input:	No-voltage contact
Video Output:	Composite Video Signal: 1 V[p-p]/75 Ω
Alarm Output:	Open collector output: 16 V DC, 100 mA max.
Alarm Reset Output:	Open Collector (O.C.): 16 V DC 100 mA max. Pulse (VCR): +5 V DC approx. 500 m sec. internally switchable
Data Input/Output:	Equivalent to RS-485: 4-Line (Full-Duplex)/2-Line (Half-Duplex) switchable
Lens Control:	Zoom: Tele/Wide Focus: Near/Far/Auto Focus Iris: Open/Close/Preset
Pan/Tilt Control:	Manual Pan/Manual Tilt: 8-directions, 8-steps/4-steps (slow) speed Auto Pan: On/Off Random Pan: On/Off
Housing Control:	Wiper: On/Off Defroster: On/Off AUX 1 - 2
Camera Control:	Position Select: Preset Position, Home Position Camera Patrol: Learn/Play/Stop Electronic Zoom Color/Black and white selectable Camera function Camera Setup Camera Data Upload/Camera Data Download (Up to eight video cameras)
Alarm:	Alarm Buzzer: On/Off Alarm Title Display: On/Off Alarm Reset/Manual Reset Alarm Suspension/Alarm Suspension Reset
Ambient Operating Temperature:	-10°C - +50°C (14°F -122°F)
Ambient Operating Humidity:	Less than 90 %
Dimensions:	330 mm (W) x 74.5 mm (H) x 221 (D) mm 13" (W) x 2-15/16" (H) x 8 11/16" (D)
Weight:	2.4 kg (5.3 lbs.)

Dimensions and weight are approximate.
Specifications are subject to change without notice.

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