Operating Instructions

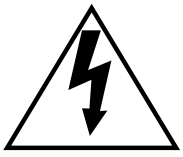
Video Multiplexer

WJ-FS616

Panasonic®

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

CONTENTS



SA 1965

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

SA 1966

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

Caution:

Before attempting to connect or operate this product, please read the label on the bottom.

For U.S.A

Warning:
This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. WJ-FS616

Serial No. _____

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

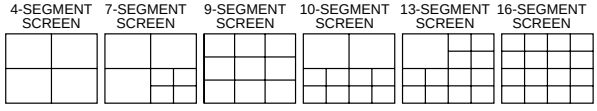
PREFACE

The WJ-FS616 Video Multiplexer is designed to multiplex the field signals from video cameras and record the camera images on a time lapse VCR. Up to 16 cameras can be connected to the unit for monitoring images in multiscreen, sequence, still or electronic zoom mode on a video monitor screen.

The WJ-FS616 allows you to control camera functions such as lens focussing, zooming, and iris, positioning of the pan/tilt head, etc. This makes the system highly flexible and sophisticated, and allows expansion to up to 64 cameras.

FEATURES

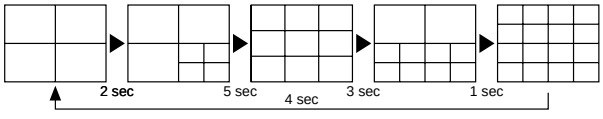
- The pictures of any connected camera can be displayed on full screen or on a 4, 7, 9, 10, 13 and 16 multiscreen as shown below.



  (7, 10 and 13 multiscreens are not available for playback pictures.)

  In addition, one playback picture can be displayed with camera pictures in 4, 7, 10 and 13 multiscreens.

- The pattern of a spot sequence consisting of up to 32 steps can be programmed by presetting the channel order and individual dwell time.
  The pattern of a 4, 7, 9, 10, 13, or 16 multiscreen sequence consisting of up to 5 steps can be programmed as shown below.



- Electronic zoom and still image functions are available. The zoom area can be selected with the direction arrow buttons.

- Up to 16 camera images multiplexed by the field rate are available at the REC OUT connector for recording on the time lapse VCR. Alarm priority recording is supported.

- Camera functions such as pan/tilt, lens zoom, focus and iris, and camera setup can be controlled via a single cable or RS-485 interface.

- The WJ-FS616 has a versatile alarm mode to optimize its multiscreen output, spot output, and record output.

- REC, PLAY, REW, FF, etc. can be controlled from the front panel of the video multiplexer, via the RS-232C interface or the wired remote control terminal of the Panasonic Time Lapse VCR.

- The WJ-FS616 can be controlled from a PC or the WV-CU550A System Controller via RS-232C or RS-485 interface.

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.

- **Fully charge up the backup battery.**
  Keep the appliance turned on for at least 48 hours to recharge the backup battery. This procedure is necessary when using the appliance for the first time or after it has been unplugged for a long time from the AC outlet. Insufficient charging of the battery may cause erasure of settings if the AC power supply should fail. The battery, if fully charged, will back up the settings for 72 hours in an ordinary environment.

- **We recommend that you note down your settings and retain them. Power or battery failure may erase settings you entered.**

- **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.

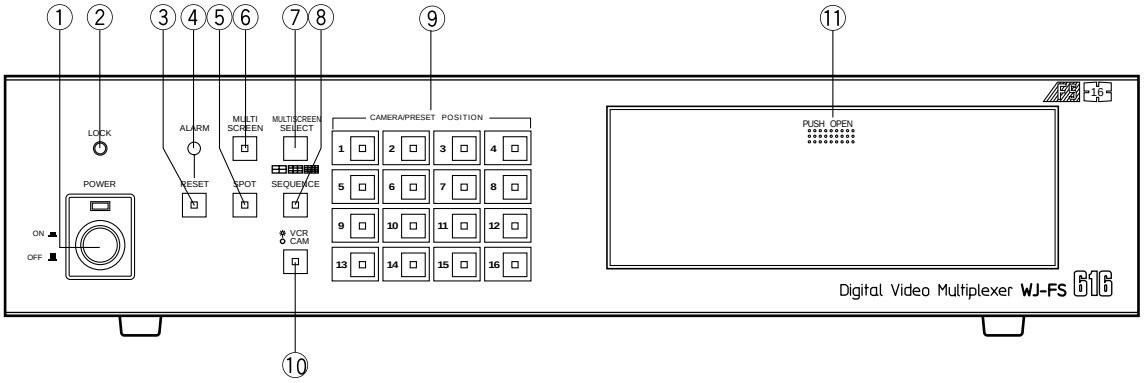
- **Do not use strong or abrasive detergents when cleaning the appliance body.**
  Use a dry cloth to clean the appliance when it is dirty.
  When the dirt is hard to remove, use a mild detergent and wipe gently.

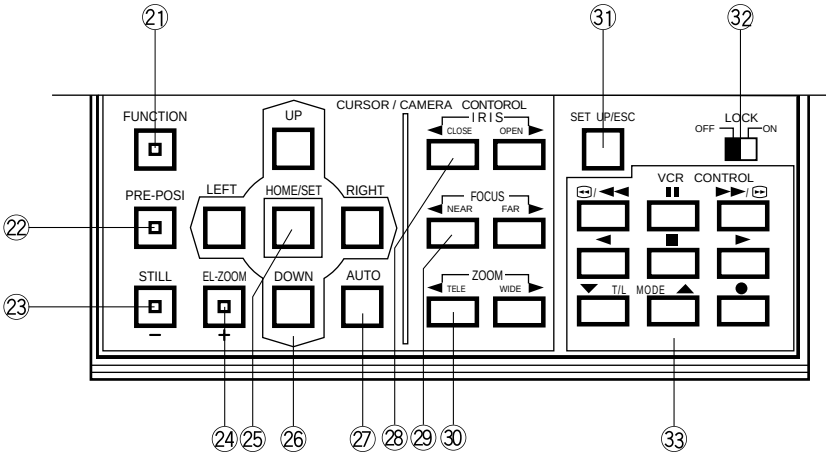
- **Do not operate the appliance beyond its specified temperature, humidity or power source ratings.**
  Do not use the appliance in an extreme environment where high temperature or high humidity exists.
  Use the appliance at temperatures within –10°C - +50°C (14°F - 122°F) and a humidity below 90 %.
  The input power source for this appliance is 120 V AC 60 Hz.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

■ Video Multiplexer WJ-FS616

<Front View>

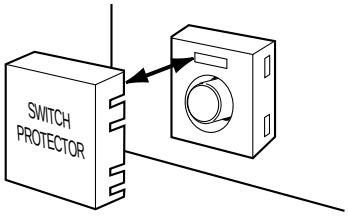




1. **Power Switch (POWER ON / OFF)**
   This switch turns the power of the video multiplexer on or off. The LED lights up when the power is turned on.

   Caution: The LED indicator blinks to indicate an abnormality of the cooling fan in this appliance. Turn the power off and refer servicing to qualified service personnel.

   Note: To prevent that the power of the video multiplexer is turned off accidentally, install the supplied switch protector as shown below.



2. **Lock Indicator (LOCK)**
   This LED (Yellow) indicator lights up to indicate that the LOCK switch is in ON position.
   While this LED is lit, control from the video multiplexer is disabled.

3. **Alarm Reset Button (ALARM RESET)**
   This button is used to cancel an active alarm. Press this button, while the alarm function is activated, to reset the alarm and return the system to the condition before the alarm function was activated.
   The LED (Orange) in the button lights up to indicate that the alarm suspension mode is selected.

4. **Alarm Indicator (ALARM)**
   This LED (Red) indicator blinks to indicate an alarm condition exists.
   It changes to steady light when the alarm is reset automatically.
   To turn the indicator off, press the ALARM RESET button.

5. Spot Monitor Button (SPOT)

This button is used to operate the spot monitor connected to the SPOT OUT connector.

The LED (Green) in the button lights up to indicate that the spot monitor is selected.

6. Multiscreen Monitor Button (MULTISCREEN)

This button is used to operate the multiscreen monitor connected to the MULTISCREEN connector.

The LED (Green) in the button lights up to indicate that the multiscreen monitor is selected.

Note: When REC OUT is used as Multiscreen 2 Output, this button alternately selects multiscreen output or multiscreen 2 output.

The LED blinks to indicate that the multiscreen output 2 is selected.

7. Multiscreen Selection Button (MULTISCREEN SELECT)

This button is used to select the multiscreen pattern to be displayed on the multiscreen monitor while monitoring the camera picture or VCR playback picture.

Pressing this button repeatedly will switch the screen as follows:

Camera Picture:

4→7→9→10→13→16→4 screen segments

VCR Playback Picture:

4→9→16→4 screen segments

8. Sequence Button (SEQUENCE)

This button is used to activate the sequence mode. In this mode, a series of camera pictures is displayed in succession on the monitor screen for the specified duration.

The LED (Green) in the button lights up to indicate that this mode is selected.

9. Camera Number Button (CAMERA)
Preset Position Number Buttons (PRESET POSITION)

CAMERA:

These buttons are used to select the desired camera picture.

The LED (Green) in the button lights up to indicate the camera number presently selected.

PRESET POSITION:

These buttons are used in combination with the PRE POSI button to assign a preset position number to the selected camera.

10. VCR / Camera Selection Button (VCR / CAM)

This button is used to select the camera picture or VCR playback picture to be displayed on the multiscreen monitor screen.

The LED (Green) in the button lights up to indicate that the VCR mode is selected.

Note: The above operation is not valid unless multiscreen output is selected by pressing the Multiscreen Monitor button.

11. Control Panel

Press “PUSH OPEN” to open the control panel.

21. Function Button (FUNCTION)

This button is used to display the VCR playback picture with the camera pictures on the multiscreen monitor.

During the setup, this button is used to select the next page.

22. Preset Position Button (PRE-POSI)

This button is used to assign a preset position to a specified camera.

23. Still Button (STILL)
Increment Button (+)

This button is used to still the picture displayed on the multiscreen monitor.

The LED (Green) in the button lights up to indicate that the still mode is selected.

During the setup, this button is used to select the desired parameter in the setup menu.

24. Electronic Zoom Button (EL-ZOOM)
Decrement Button (–)

This button is used to zoom the picture presently displayed on the multiscreen monitor.

The LED (Green) in the button lights up to indicate that the zoom mode is selected.

During the setup, this button is used to select the desired parameter in the setup menu.

25. Home / Set Button (HOME / SET)

This button is used to return to the home position of the camera.

During the setup, this button is used to display a submenu in the setup menu if the item has its own setting menu.

26. Direction Arrow Buttons

These buttons are used to operate the Pan/Tilt Head manually, to move the cursor position in the setup menu of the Video Multiplexer, or to select an area for Electric Zooming.

UP:	Upward
DOWN:	Downward
LEFT:	Left
RIGHT:	Right

27. Auto Button (AUTO)

This button is used to activate the auto panning function when the specified camera is connected.

28. Iris Control Buttons (IRIS, CLOSE / OPEN)

These buttons are used to close or open the lens iris of the specified lens mounted on the camera.

When these buttons are pressed at the same time, the lens iris is reset to the factory settings.

29. Focus Control Buttons (FOCUS, NEAR / FAR)

These buttons are used to adjust the lens focus of the specified lens mounted on the camera.

When these buttons are pressed at the same time, the lens focus is automatically set.

30. Zoom Control Buttons (ZOOM, TELE / WIDE)
These buttons are used to adjust the lens zoom of the specified lens mounted on the camera.

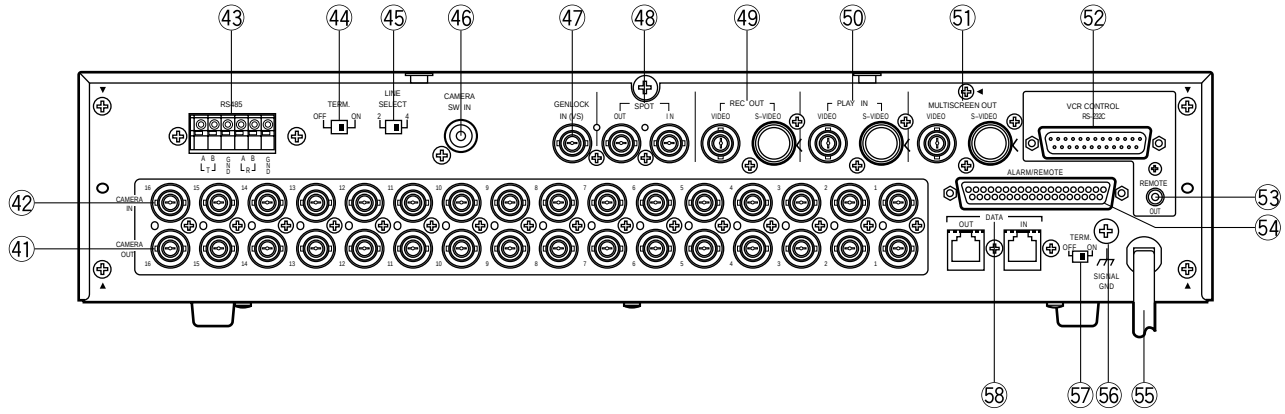
31. Setup/Escape Button (SETUP / ESC)
This button is used to display the setup menu of the Video Multiplexer.
During the setup, press this button to execute the currently selected setting and return to the previous setup menu.

32. Lock Switch (LOCK OFF / ON)
This switch can be used to lock out operation of the video multiplexer panel controls.
While this switch is in ON position, control from the video multiplexer is disabled.

33. VCR Control Buttons
These buttons are used for remote control of the VCR that is connected to the Video Multiplexer.
The buttons function as shown below.

- ⇔/◄◄ : Rewind
- ▮▮ : Pause
- ►►/⇔ : Fast Forward
- ◄ : Reverse Play
- ■ : Stop
- ► : Play
- ▼ : Decreases recording duration
- ▲ : Increases recording duration
- ● : Record

<Rear View>



41. Camera Output Connector (CAMERA OUT)
The video signal connected to the Camera Input Connector (CAMERA IN) is looped through to these connector with an automatic 75 Ω termination.
The camera control signal multiplexed on the video signal is not avairable at this connector. When the Power Switch of the Video Multiplexer is turned off, no signal is present at this connector.

42. Camera Input Connector (CAMERA IN)
These connectors accepts either a color or B/W composite video signal from the camera. In addition, the VD2 signal for synchronizing the vertical timing of the cameras, and data to control camera site devices are multiplexed through this connector.

43. RS485 Terminal (RS485)
This terminal is used to exchange control data with the camera site.

44. Termination Switch (TERM., OFF / ON)
This switch is used to enable termination of the RS485 terminal.

45. Line Selection Switch (LINE SELECT, 2/4)
This switch lets you select either Full Duplex (4 lines) or Half Duplex (2 lines) for the communication lines.

46. Camera Switching Input Connector (CAMERA SW IN)
The camera switching pulse from the time lapse VCR is supplied to this connector.
The camera switching interval (Sequential Dwell Time) can be synchronized with the time lapse mode set in the associated time lapse VCR.

47. Gen-Lock Input Connector (GENLOCK IN (VS))
The Gen-Lock signal can be supplied to this connector for synchronizing the system.

48. Spot Connector (SPOT, OUT / IN)
IN: This connector accepts the video output signal from the external system.
The supplied video can be displayed on the spot monitor screen with the specified conditions.
OUT: This connector supplies the video output signal for the spot monitor.

49. Record Output Connector (REC OUT, VIDEO / S-VIDEO)

The recording signal for the time lapse VCR is provided via this connector.

This connector can also be used as multiscreen output 2 with the specified conditions.

50. Playback Input Connector (PLAY IN, VIDEO / S-VIDEO)

The playback signal from the time lapse VCR is supplied to this connector.

51. Multiscreen Output Connector (MULTISCREEN OUT)

The video output signal for the multiscreen monitor is provided via this connector

52. RS-232C Port (VCR CONTROL, RS-232C)

The VCR control signal for the time lapse VCR is provided via this connector.

Connecting a PC to this connector will allow you to remote control the video multiplexer.

53. Remote Output Connector (VCR CONTROL, REMOTE OUT)

The VCR control signal for the time lapse VCR is provided via this connector.

You can select on the setup menu whether to have the VCR control signal supplied from this connector or the RS-232C Port.

54. Alarm / Remote Control Connector (ALARM / REMOTE)

This connector accepts the alarm signals from the associated alarm sensor units and the control signals from the external system.

55. Power Cord

56. Signal Ground Terminal (SIGNAL GND)

57. Termination Switch (TERM., OFF / ON)

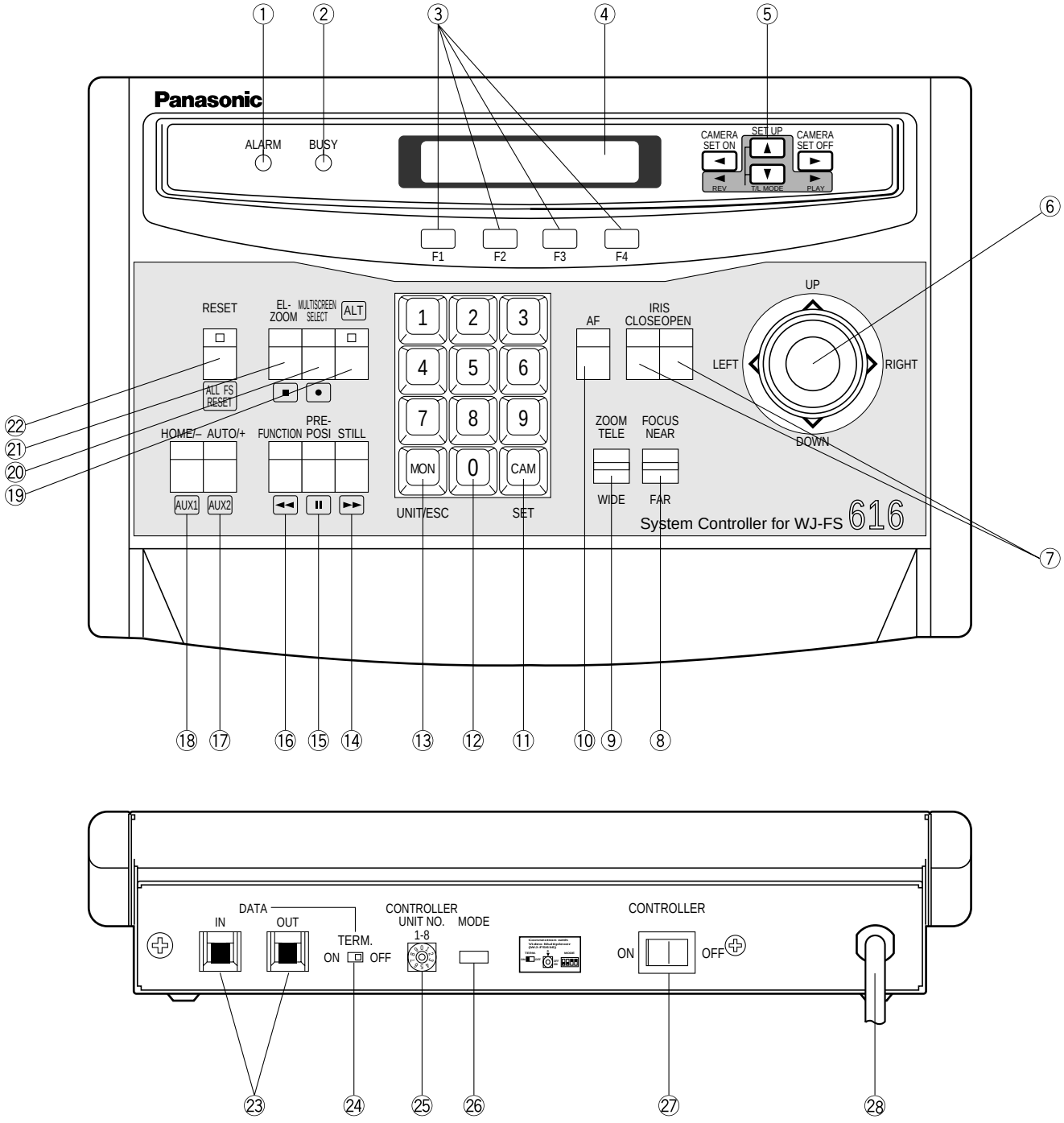
This switch is used to enable termination of the video multiplexer's data port.

58. Data Port (DATA, OUT / IN)

These ports are used to exchange control data with the WV-CU550A System Controller or a PC in a system.

■ System Controller WV-CU550A

Note: When using this controller in combination with the WJ-FS616, cover the panel of the controller with the panel templates provided.



1. **Alarm Indicator (ALARM)**
   This LED indicator (Red) lights up to indicate that an alarm condition exists.
   It goes off when the alarm is reset automatically.
   To turn the indicator off, press the ALARM RESET button.

2. **Busy Indicator (BUSY)**
   This LED lights up to indicate that the system is locked by PC command.
   While this LED is lit, control from the video multiplexer and system controller is disabled.

3. **Function Buttons (F1/F2/F3/F4)**
   These buttons are used to select functions displayed on the Liquid Crystal Display.

   F1: Operates the multiscreen monitor.
   F2: Operates the spot monitor.
   F3: Activates the sequence mode.
   In this mode, a series of camera pictures is displayed in succession on the monitor screen for the specified duration.
   F4: Selects the camera picture or VCR playback picture to be displayed on the monitor screen.

4. **Liquid Crystal Display**
   This displays the function menu and function status. In this Instructions Manual, it is hereafter referred to as the “LCD”.

5. **Arrow Buttons (◄ ▲ ► ▼)**
   These function as shown below.

   Camera Set On Button (CAMERA SET ON ◄)
   This button is used to display the camera setup menu on the monitor screen.

   Set Up Button (SET UP ▲)
   This button is used to display the Setup Menu of the Video Multiplexer.

   Camera Set Off Button (CAMERA SET OFF ►)
   This button is used to exit the camera setup menu displayed on the monitor screen.

   Time Lapse Mode Buttons (T / L MODE, ▲ ▼)
   These buttons, used in combination with the Alternate button, select the time lapse mode of the Time Lapse VCR.
   Press the (▲) button to increase the recording duration or the (▼) button to decrease the recording duration.

   Reverse Play Button (REV ◄)
   This button, used in combination with the Alternate button, activates reverse playback on the Time Lapse VCR.

   Play Button (PLAY ►)
   This button, used in combination with the Alternate button, activates playback on the Time Lapse VCR.

6. **Joystick Controller**
   The joystick is used to operate the Pan/Tilt Head manually, or to move the cursor to the desired position on the setup menu of the Video Multiplexer.

7. **Iris Control Buttons (IRIS, CLOSE / OPEN)**
   These buttons are used to close or open the lens iris of the specified lens mounted on the camera.
   When these buttons are pressed at the same time, the lens iris is reset to the factory settings.

8. **Focus Control Button (FOCUS, NEAR / FAR)**
   This button is used to adjust the lens focus of the specified lens mounted on the camera.

9. **Zoom Control Button (ZOOM, TELE / WIDE)**
   This button is used to adjust the lens zoom of the specified lens mounted on the camera.

10. **Auto Focus Button (AF)**
    This button is used to activate the auto focus function when the specified camera with auto focus feature is selected.

11. **Camera Key (CAM)**
    Set Key (SET)
    CAM: This key is used for camera selection. Press the desired Numeric Keys, then press this key to select the camera.
    SET: This key is used to execute the currently highlighted setting and display a sub menu in the setup menu of the Video Multiplexer.

12. **Numeric Keys (0-9)**
    These keys are used for numeric input into the system, such as the number of a camera you want to select.

13. **Unit/Escape Key (UNIT / ESC)**
    This key is used to select the Video Multiplexer unit. Press the desired Numeric Key, then press this key to select a specific Video Multiplexer.
    This key is also used to execute the settings and return to the previous menu.

14. **Still Button (STILL)**
    This button is used to still the picture displayed on the monitor screen.

15. **Preset Position Button (PRE-POSI)**
    This button is used to assign a preset position to the specified camera.

16. Function Button (FUNCTION)

This button is used to display the VCR playback picture with the camera pictures on the multiscreen monitor.

During the setup, this button is used to select the next page.

17. Auto/Increment Button (AUTO / +)

This button is used to activate the auto panning function.

During the setup, this button is used to select the desired parameter in the setup menu.

18. Home/Decrement Button (HOME / –)

This button is used to move the camera to the home position.

During the setup, this button is used to select the desired parameter in the setup menu.

19. Alternate Button (ALT)

Press this button to have the other 8 buttons switch to their alternate functions. These buttons are identified by special labeling - - text or a symbol in a rounded corner rectangular. For example, while the indicator (green) of the ALT button is lit, pressing the STILL button controls the VCR rewind function.

20. Multi Screen Selection Button (MULTISCREEN SELECT)

This button is used to select the desired multiscreen to be displayed on the multiscreen monitor, when monitoring the camera picture or VCR playback picture.

Pressing this button repeatedly will switch the screen as follows:

Camera Picture:

4→7→9→10→13→16→4 screen segments

VCR Playback Picture:

4→9→16→4 screen segments

21. Electronic Zoom Button (EL-ZOOM)

This button is used to zoom the picture currently displayed on the monitor screen.

Note: The above operation is not valid unless multiscreen output is selected by pressing the **(F1)** Function button.

22. Alarm Reset Button (RESET)

This button is used to cancel an active alarm of the currently selected unit and to return to the condition before the alarm function was activated. When plural Multiplexer units are connected in a daisy chain, pressing the ALT button and then this button resets all alarm inputs at once.

23. Data Ports (DATA, IN / OUT)

These ports are used to exchange control data with the WJ-FS616 Video Multiplexer.

24. Termination Switch (TERM., ON / OFF)

This switch is used to enable termination of the controller's data port.

When combined with the WJ-FS616 Video Multiplexer, set this switch to the "ON" position.

25. Controller Unit Number Switch (CONTROLLER UNIT NO. 1-8)

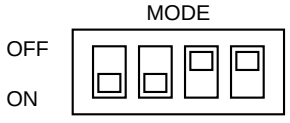
This switch is used to identify the unit number of the System Controller.

When combined with the WJ-FS616 Video Multiplexer, set this switch to the "0" position.

26. Mode Selection Switches (MODE)

These switches are used to select the mode of the system controller connected to the video multiplexer.

When combined with the WJ-FS616 Video Multiplexer, set as shown below.



27. Controller On / Off Switch (CONTROLLER ON / OFF)

This switch is used to turn the power of the system controller on or off.

28. Power Cord

INSTALLATIONS

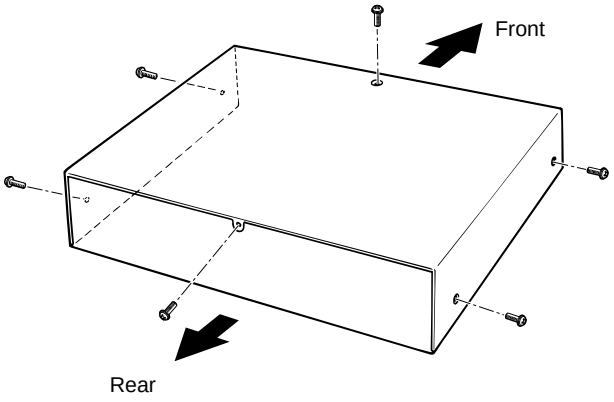
The installations described below should be made by qualified service personnel or system installers.

■ Installing the WV-PB6164 Data Multiplex Boards

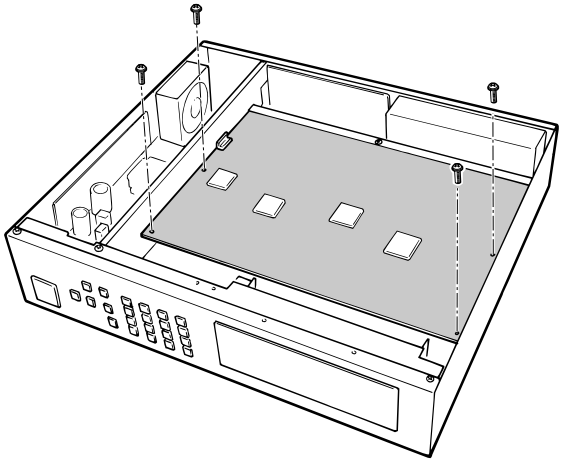
When controlling the camera with the multiplexed control data by connecting a coaxial cable, the WV-PB6164 Data Multiplex Board must be installed in the Video Multiplexer.
Four data multiplex boards are included with the WJ-FS616 for cameras 1 to 4.
Please note that additional multiplex boards are available for purchase as model WV-PB6164 Data Multiplex Boards, which includes four control boards.

Caution: Before installing boards, be sure to turn off the Power Switch of the video multiplexer.

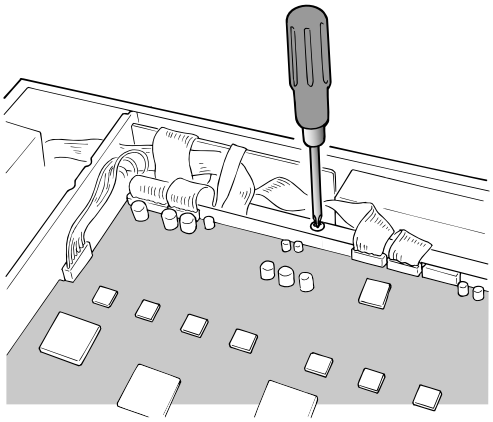
1. Remove the six screws on the top cover of the video multiplexer as shown below.



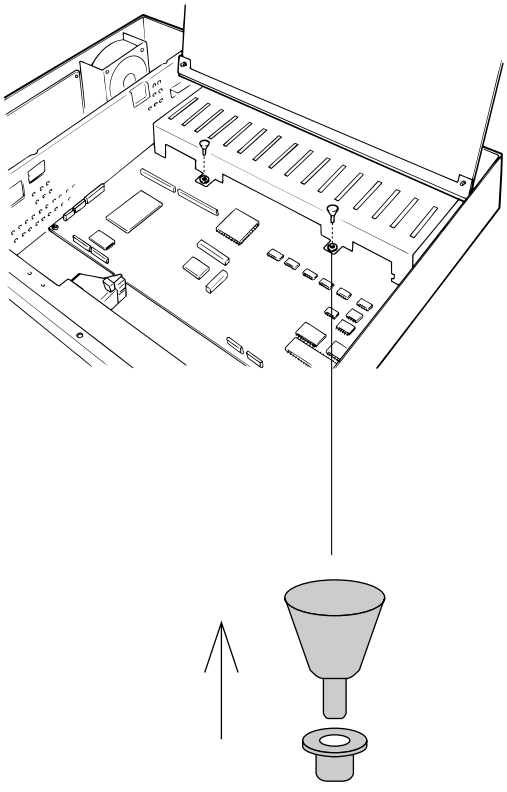
2. Remove the top cover.
3. Remove the four screws on the board as shown below.



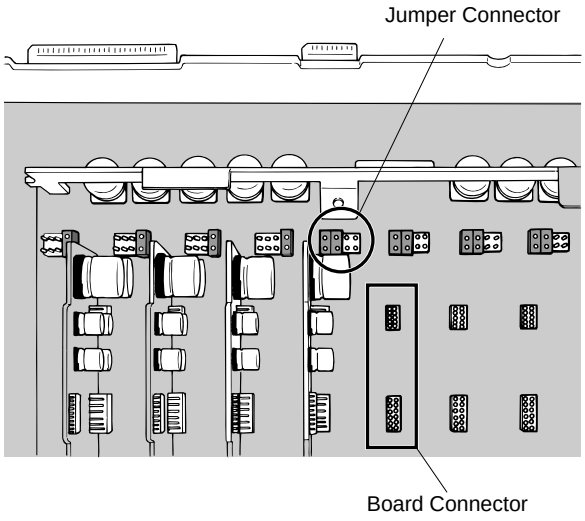
4. Remove the one screw shown below. Then turn over the printed circuit board with the front side up.

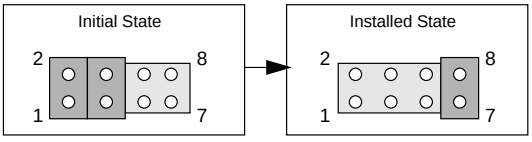


5. Pull out the two knobs from the bracket shown below. Then remove the bracket.

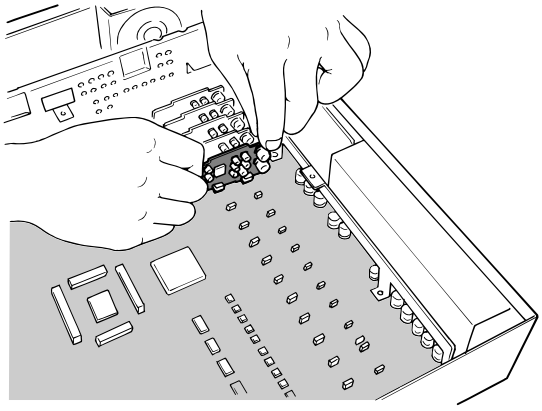


6. Set the jumper connector, located at the top left of the board to be installed, to the position shown below.





7. Insert the board and confirm that the position is correct. Then push it in straight.



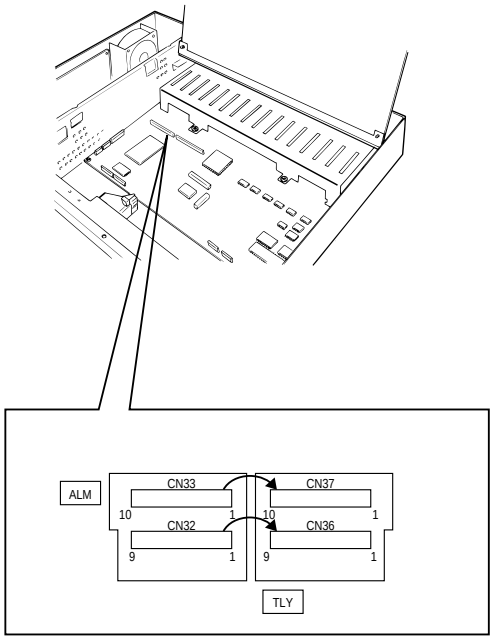
8. After installing the boards, secure them by tightening the screws and knobs shown above.

Note: Some settings for the VD2 signal and control data will be necessary from the setup menu of the Video Multiplexer. Refer to Cable Compensation/VD2/Data Setup on page 34 for details.

■ Tally Output Setting

Allows you to use the Alarm Input Terminal as Tally Output Terminal by changing two internal connections.

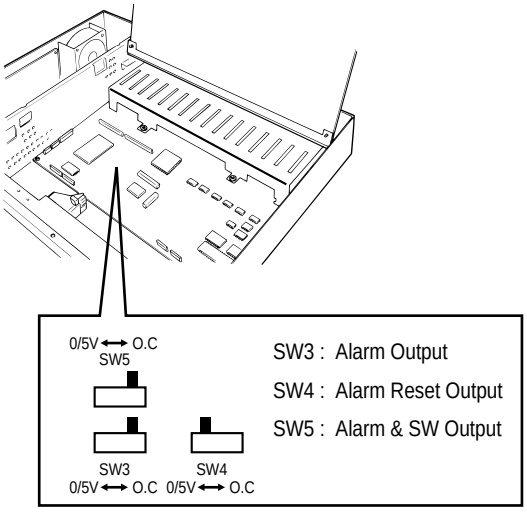
1. Disassemble the video multiplexer as described for installing the Data Multiplex Boards on page 10.



2. Move the two connectors from the ALM side to the TLY side as shown above.
The relation between the connector numbers and channel numbers is shown in the table below.

	Alarm Input	Tally Output
CH9 - CH16	CN33	CN37
CH1 - CH8	CN32	CN36

■ Dip Switch Setting



● Alarm Output Setting

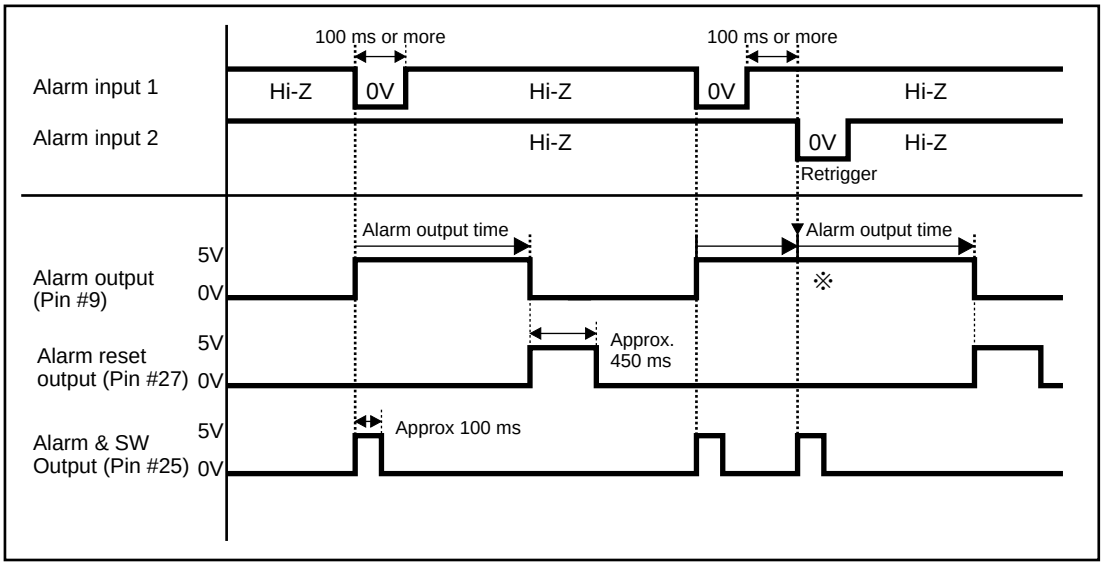
1. Disassemble the video multiplexer as described for installing the Data Multiplex Boards on page 10.

2. Set switches (SW3/SW4/SW5) on the board to choose the alarm control signals as either Open Collector (O.C) or Pulse (0/5V).

   Open Collector (O.C): 16V DC 100 mA max.
   Pulse (0/5V): +5V DC approx. 500 ms

   The above switch positions are the initial factory settings.

Timing Chart of Alarm Output, Alarm Reset Output, Alarm and Switching Output (0/5 V Selected)



※ If another alarm is input before the existing alarm is reset, the alarm output lasts as long as the time set for the succeeding alarm.

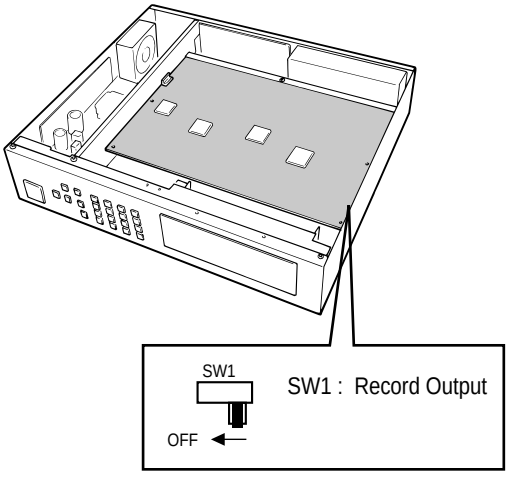
• The O.C position of SW3, SW4, and SW5 corresponds to their 0/5 V position as shown in the table on the right side.

Terminal condition / SW	OFF	ON
O.C position	Hi-Z	0 V
0/5 V position	0 V	5 V

● Dummy Black Picture Setting

According to the initial factory setting, the Dummy Black Picture signal is supplied to the REC OUT connector as needed to overwrite any picture displayed by error. If this function is not required, set the switch SW 1 to the position shown below.

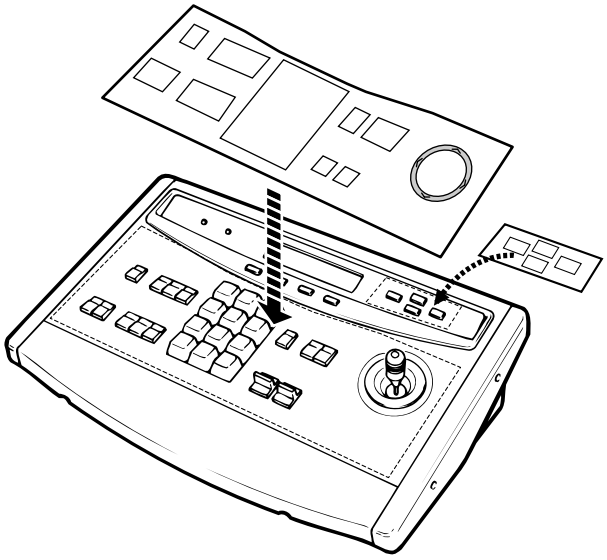
1. Disassemble the video multiplexer as described for installing the Data Multiplex Boards on page 10.
2. Set switch (SW1) on the board to the position shown above.



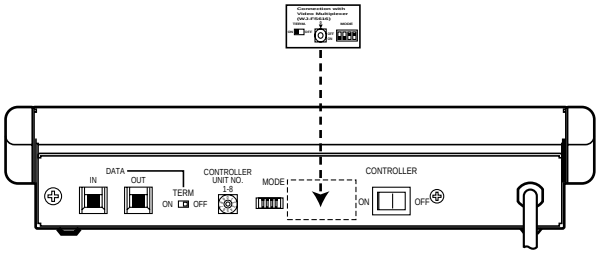
■ WV-CU550A System Controller

● Modifying the Front Panel

1. Peel the tape off the supplied panel templates, then attach them on the front panel of the System Controller.



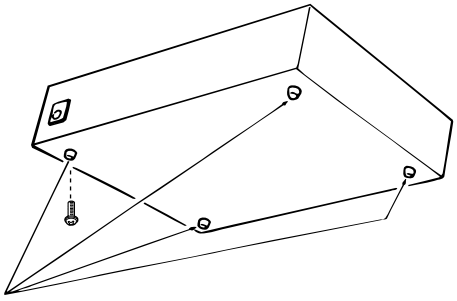
2. Peel off the label and attach it on the rear of the System Controller as shown below.



■ WJ-FS616 Video Multiplexer

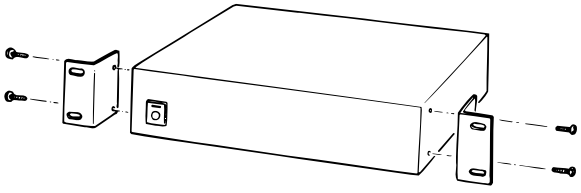
● Mounting in the Rack

1. Remove the four rubber feet by removing the four screws on the bottom of the video multiplexer.

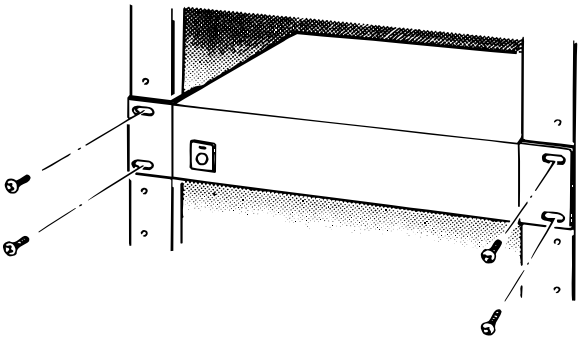


Remove 4 rubber feet

2. Place the rack mounting brackets on both sides of the video multiplexer and tighten with the four supplied screws (M4 X10).



3. Install the video multiplexer with the rack mounting brackets in the rack by using four screws (not included).

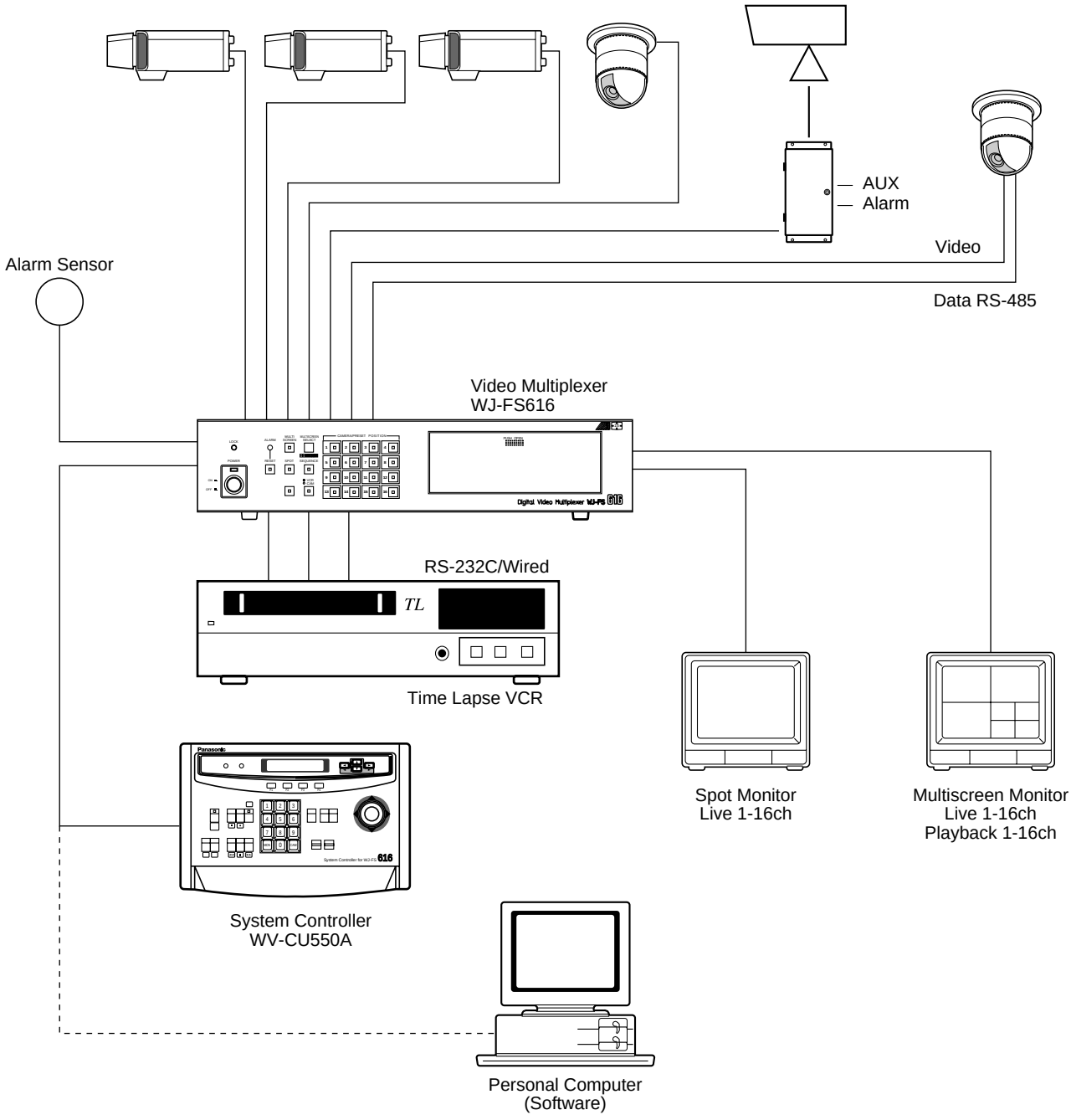


Cautions:

- Do not block the ventilation opening or slots on the cover to prevent the appliance from overheating.
  Always keep the temperature in the rack within 45°C (113°F).
- Secure the rear of the appliance to the rack by using additional mounting brackets (procured locally) if the rack is subject to vibrations.

SYSTEM CONNECTIONS

Shown below is an example of a basic system connection.



Basic System Connection

■ Connection with the Camera Sites

Connect cameras (or camera site equipment) data multiplexed type to the CAMERA IN connectors 1 through 4 on the rear panel of the Video Multiplexer.

Note: Make sure that the cable length between the camera site and the WJ-FS616 Video Multi-plexer is less than 900 m (3 000 ft) when using RG-59/U, BELDEN 9259 or equivalent cables.

Connect none multiplexed type cameras to the CAMERA IN connectors 5 through 16.

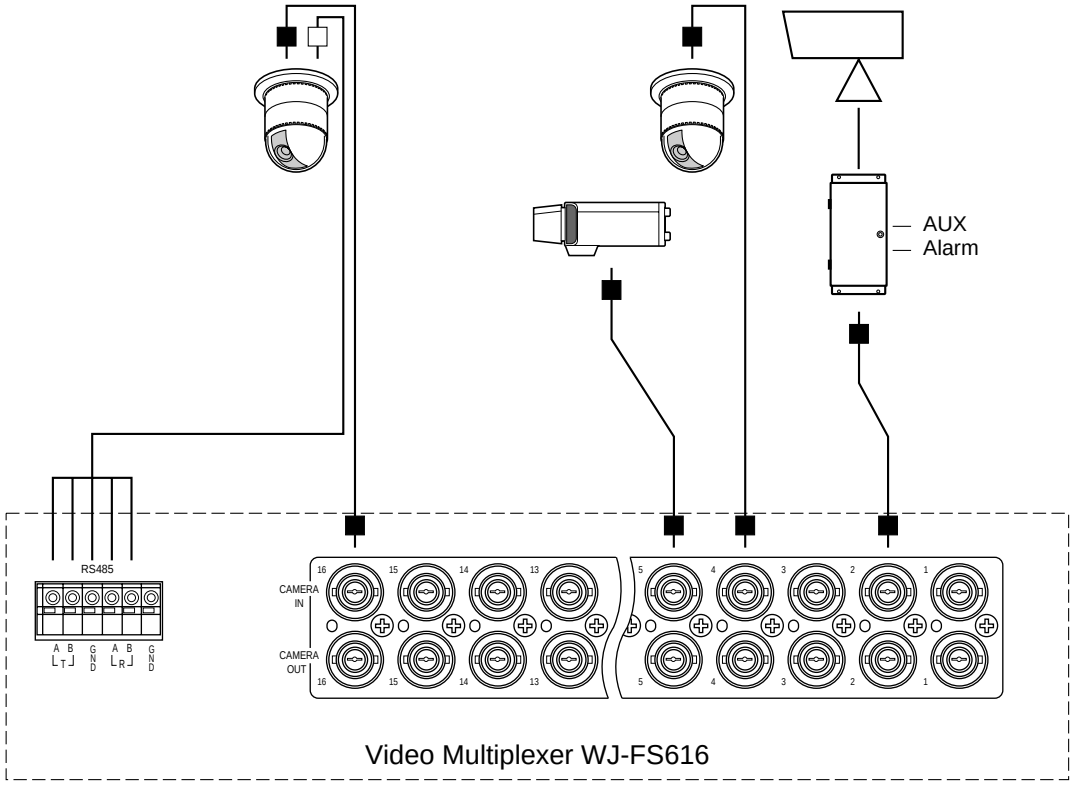
Note: If you need to change input channels from the none multiplexed type to multiplexed, install the WV-PB6164 Data Multiplex Boards for the corresponding channels inside the Video Multiplexer. For installations, see page 10.

For cameras equipped with RS-485 communication facility, connect the RS-485 cable as follows.

Note: If you use cables assembled from locally procured materials, it is important that only high quality, data grade cable, suitable for RS-485 "2-wire twisted pair shielded cable" is used, BELDEN 9406 or equivalent.
Low grade cable will result in unstable operation of the system.

Check the settings of the camera addresses when using cameras capable of RS-485 communication. Operations from the Multiplexer will not work if the camera addresses are set improperly.

1. Do not use addresses other than 1 through 16 for individual cameras ("17" is not allowed.)
2. Do not set the same address for more than one camera in an RS-485 chain.



■ Connections for RS-485 type camera

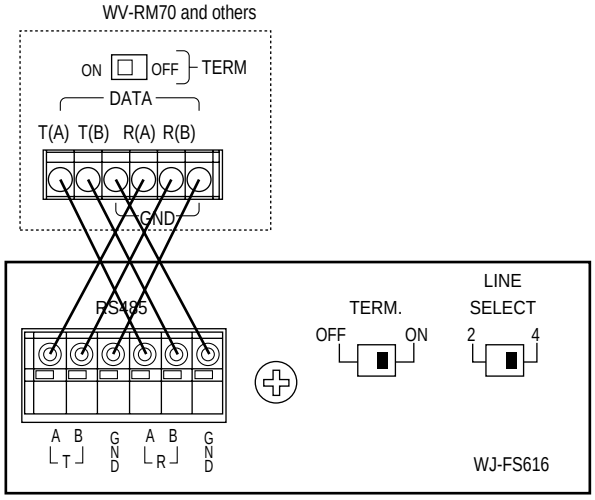
There are two options to connect the camera with the Multiplexer, depending on the distance between them.

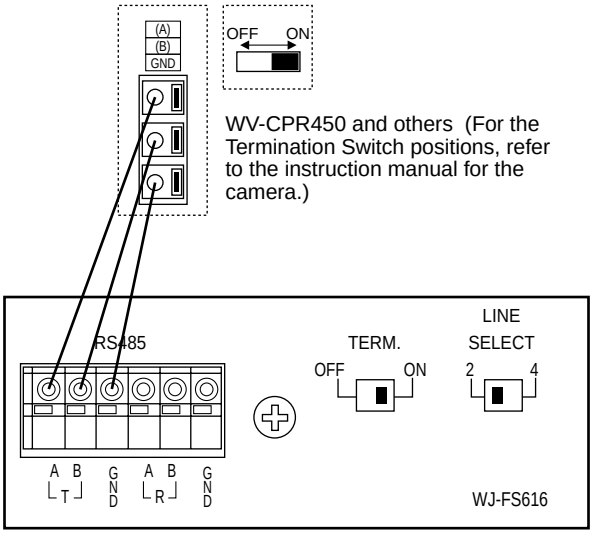
For data multiplexed type cameras, a maximum distance of 900 meters (3 000 ft) is the limit for using coaxial cable such as RG-59/U, BELDEN 9259 or equivalent.

If more distance is required, use cameras and Multiplexers with RS-485 communication feature. This will lower signal loss and extend the distance as video signal and data are transmitted separately. Note that you need to set up the communication port as described on page 35 when using the RS-485 feature.

Note: Recommended for RS-485 communication is shielded, two-wire, twisted pair, low impedance cable, AWG#22 or thicker.

(1) Connect with single RS-485 camera as shown below, setting the LINE SELECT switch to “2” or “4”.





(2) Connect cameras in a Daisy Chain

1. Draw up a plan for connection between the cameras and the input channels of the Video Multiplexer, and the assignment of unit addresses to cameras.

   Caution:

   Check the settings of the camera addresses when using cameras capable of RS-485 communication. Operations from the Multiplexer will not work if the camera addresses are set improperly.

   1. Do not use addresses other than 1 through 16 for individual cameras (“17” is not allowed).
   2. Do not set a single address for more than one camera in an RS-485 chain.

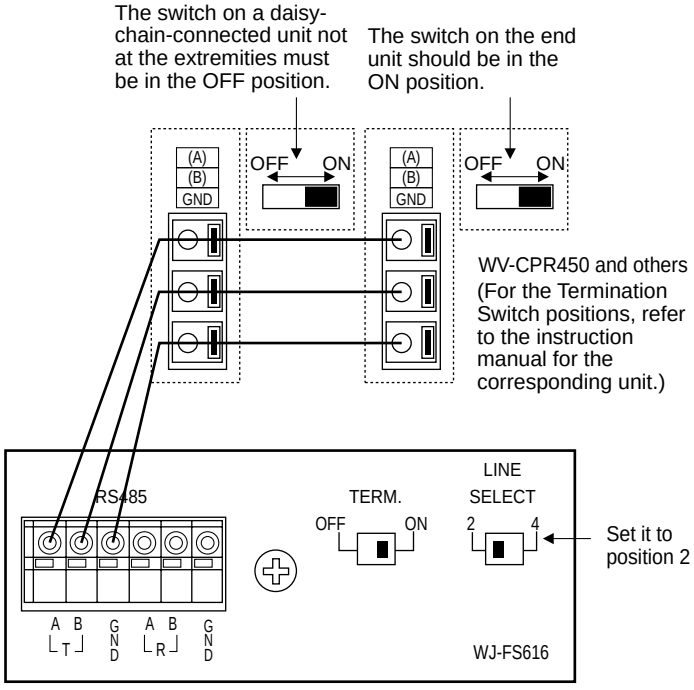
2. Set the LINE SELECT switch of the Multiplexer to “2”. Also set the switch of the connected equipment if required.

3. Connect one end of the cable as shown to the RS-485 terminal of the Multiplexer, and the other end to the first camera in the chain. Repeat this procedure for all cameras to the end of the chain.

4. Set the termination switches of the Multiplexer and cameras at both ends of the chain to ON position. Termination switches of cameras not at the chain ends must be in OFF position.

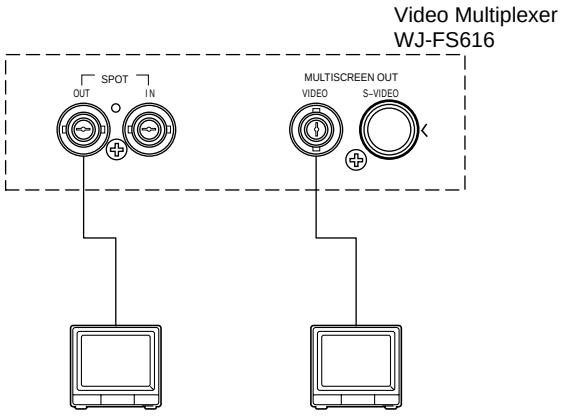
   Cautions:

   - Termination is the key to data transmission and reception in the chain. Only the switches at the chain ends must be switched ON, while the other switches are kept OFF.
   - Response may slow gradually the higher the equipment number in the chain.



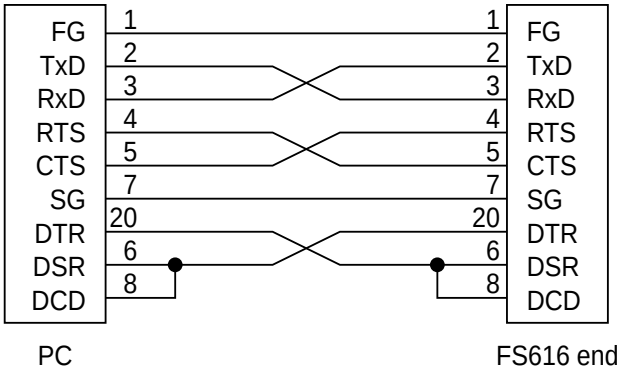
■ Connection with the Monitors

Connect the Monitors to the Spot Output (SPOT OUT) Connector and Multiscreen (MULTISCREEN) Connector on the rear of the Video Multiplexer.



■ Connection with the PC

There are two options to communicate with the PC, the first is using RS-232C port and the second is via DATA port.



RS-232C

- In page 2 of 2 of the SYSTEM SETUP menu, select the RS-232C MODE and press the SET button to activate the RS-232C port on the rear panel. Then you need to select the parameters of the RS-232C in the COM PORT SETUP menu detailed on page 35.
- Use a cross type RS-232C cable to connect the Multiplexer with the PC.

DATA

In page 2 of 2 of the SYSTEM SETUP menu, select the DATA MODE and press the SET button to activate the DATA port on the rear panel. Then you need to select the parameters of the DATA in the COM PORT SETUP menu detailed on page 35.

Use a 6-core modular cable to connect the Multiplexer with the PC.

Caution:

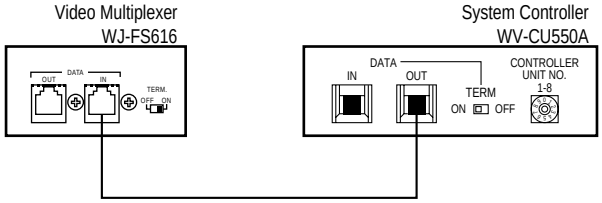
Data disruption may occur if you use both DATA port and RS-232C port at a time. Use only one port to communicate with the PC.

■ Connection with the WV-CU550A System Controller

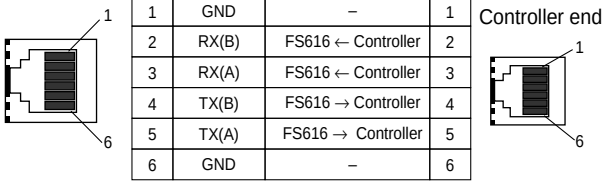
If the supplied 6-conductor cable assembly is used, simply plug one end of the cable into the DATA IN port of the Video Multiplexer and the other end into DATA OUT port on the System Controller.

If you use cables assembled from locally procured materials, it is important that only high quality, data grade cable, suitable for RS-485 “2-wire twisted pair shielded cable” is used, BELDEN 9406 or equivalent.

Low grade cable will result in unstable operation of the system.



Connection with the WV-CU550A System Controller



No.	Name	Data Flow	No.
1	GND	–	1
2	RX(B)	FS616 ← Controller	2
3	RX(A)	FS616 ← Controller	3
4	TX(B)	FS616 → Controller	4
5	TX(A)	FS616 → Controller	5
6	GND	–	6

● **Setting the Termination and Controller Unit Number**

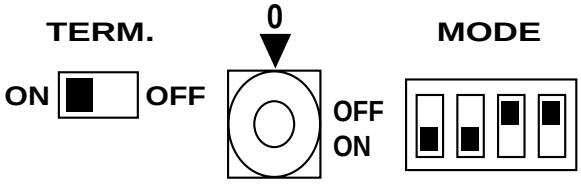
The Termination Switch and the Controller Unit Number Switch are located on the rear of the System Controller.

When combined with the WJ-FS616 Video Multiplexer, always keep these switches in the positions shown below.

● **Setting the Mode Selection Switch**

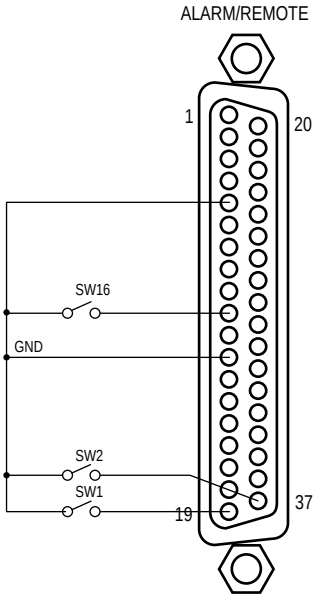
The Mode Selection Switch, that selects the operation mode of the System Controller, is located on the rear of the System Controller.

When combined with the WJ-FS616 Video Multiplexer, always keep these switches in the positions shown below.



■ Connection with Alarm Sensors

Connect the sensor switches to the Alarm/Remote (ALARM/REMOTE) Control Connector on the rear of the Video Multiplexer as shown in the example below.



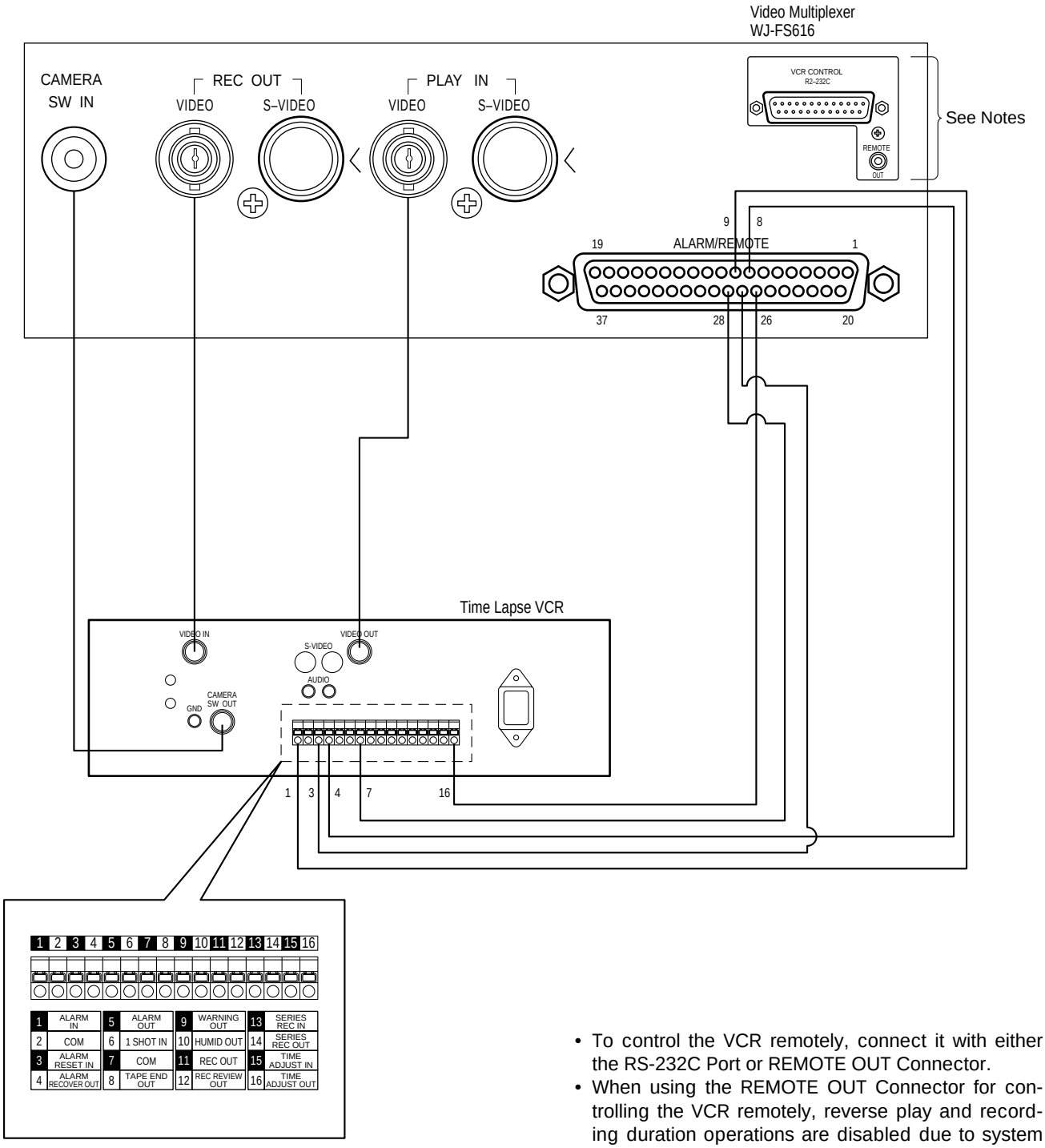
Pin No.	Designation	Pin No.	Designation
1	Function	20	Still Picture
2	Electronic Zoom	21	VCR/Camera Select
3	Sequence	22	Multiscreen Select
4	Spot	23	Multiscreen
5	Alarm/Remote Select Input	24	Ground
6	Sequence SW for Spot Output	25	Alarm & SW Output
7	Not Used	26	Time Adjust Input
8	Alarm Recover Input	27	Alarm Reset Output
9	Alarm Output	28	Ground
10	Alarm 16	29	Alarm 15
11	Alarm 14	30	Alarm 13
12	Ground	31	Alarm 12
13	Alarm 11	32	Alarm 10
14	Alarm 9	33	Ground
15	Alarm 8	34	Alarm 7
16	Alarm 6	35	Alarm 5
17	Ground	36	Alarm 4
18	Alarm 3	37	Alarm 2
19	Alarm 1		

Notes:

- Alarm inputs simultaneously or at very short intervals will be ignored. Allow for an interval of at least 100 ms from one alarm input to the next.
- Connect Pin#5, Alarm/ Remote Select Input to Pin#12, GND.

■ Connection with the Time Lapse VCR

Connect the Time Lapse VCR as shown in the example below.



Notes:

- Before controlling the VCR through the REMOTE OUT terminal:
  1. Power up the Video Mutiplexer and the VCR simultaneously .
  2. Connect the video signal cable between the Multiplexer and the VCR.
- The REMOTE OUT performs similarly to the AG-A11 Remote Controller for Time Lapse VCRs.
- To control the VCR remotely, connect it with either the RS-232C Port or REMOTE OUT Connector.
- When using the REMOTE OUT Connector for controlling the VCR remotely, reverse play and recording duration operations are disabled due to system designation.
- The VCRs shown below can be controlled remotely.

  <REMOTE OUT>

  AG-RT600

  AG-6124

  <RS-232C>

  AG-6730*

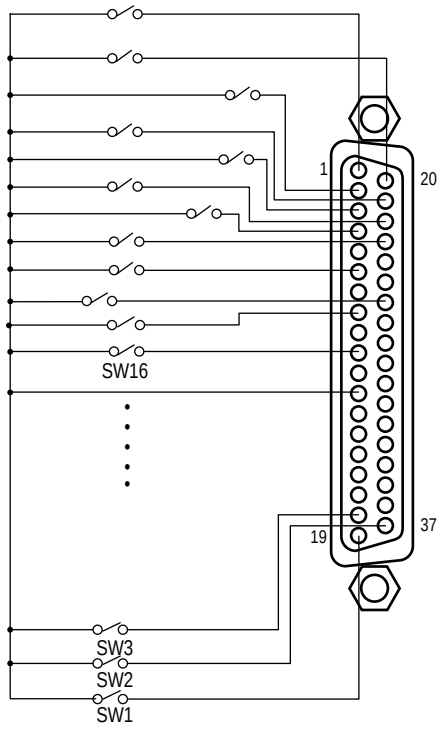
  AG-6740*

  AG-TL500

  (*Optional interface adapter is required)

■ Connection with External Remote Control Switches

Connect the switches (dry contact or open collector input) to the Alarm/Remote (ALARM/REMOTE) Control Connector on the rear of the Video Multiplexer as shown in the example below.



Pin No.	Designation	Pin No.	Designation
1	Function	20	Still Picture
2	Electronic Zoom	21	VCR/Camera Select
3	Sequence	22	Multiscreen Select
4	Spot	23	Multiscreen
5	Alarm/Remote Select Input	24	Ground
6	Sequence SW for Spot Output	25	Alarm & SW Output
7	Not Used	26	Time Adjust / Sequence SW
8	Alarm Recover Input	27	Alarm Reset Output
9	Alarm Output	28	Ground
10	Camera 16	29	Camera 15
11	Camera 14	30	Camera 13
12	Ground	31	Camera 12
13	Camera 11	32	Camera 10
14	Camera 9	33	Ground
15	Camera 8	34	Camera 7
16	Camera 6	35	Camera 5
17	Ground	36	Camera 4
18	Camera 3	37	Camera 2
19	Camera 1		

Notes:

- Pin#6, Sequence SW for Spot Output and the Pin#8, Alarm Recover Input can also accept DC voltages of 5 V (high level) and 0 V (low level) besides the switch contact signals. The Multiplexer recognizes falling edge (high to low transition) as an input.
- Pin#5, Alarm/ Remote Select Input must be open.

SETUP MENU

The Setup Menu provides a way for controlling functions not available through direct input.

● Displaying the SETUP MENU

1. Confirm the camera and peripherals are connected correctly and securely.
2. Turn on the power switches of all system components.
3. Press the **SETUP/ESC** button for 2 seconds.
   The SETUP MENU appears on the Spot and Multiscreen Monitors as shown below.

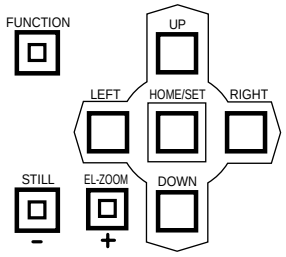

```
WJ-FS616 SETUP MENU

ALARM SETUP *
MULTI OUTPUT SETUP *
SPOT OUTPUT SETUP *
REC/MULTI2      REC OUTPUT *
SYSTEM SETUP *

CAM DOWNLOAD    NO
CAM UPLOAD      NO
ALL RESET SELECT *
```

- The following buttons are valid in the SETUP menu:

  UP: Moves the cursor upward.
  DOWN: Moves the cursor downward.
  LEFT: Moves the cursor to the left, or selects the mode or parameter.
  RIGHT: Moves the cursor to the right, or selects the mode or parameter.
  SET: Executes the selections and displays a submenu for an item with the (✳) mark.
  STILL (–): Selects the mode or parameter.
  EL-ZOOM (+): Selects the mode or parameter.
  FUNCTION: Selects the next page.



- Press the **SETUP/ESC** button to execute the currently highlighted setting and return to the previous menu in the SETUP MENU.

- To finalize the setting and return to normal viewing, press the **SETUP/ESC** button for 2 seconds while the SETUP MENU is displayed.

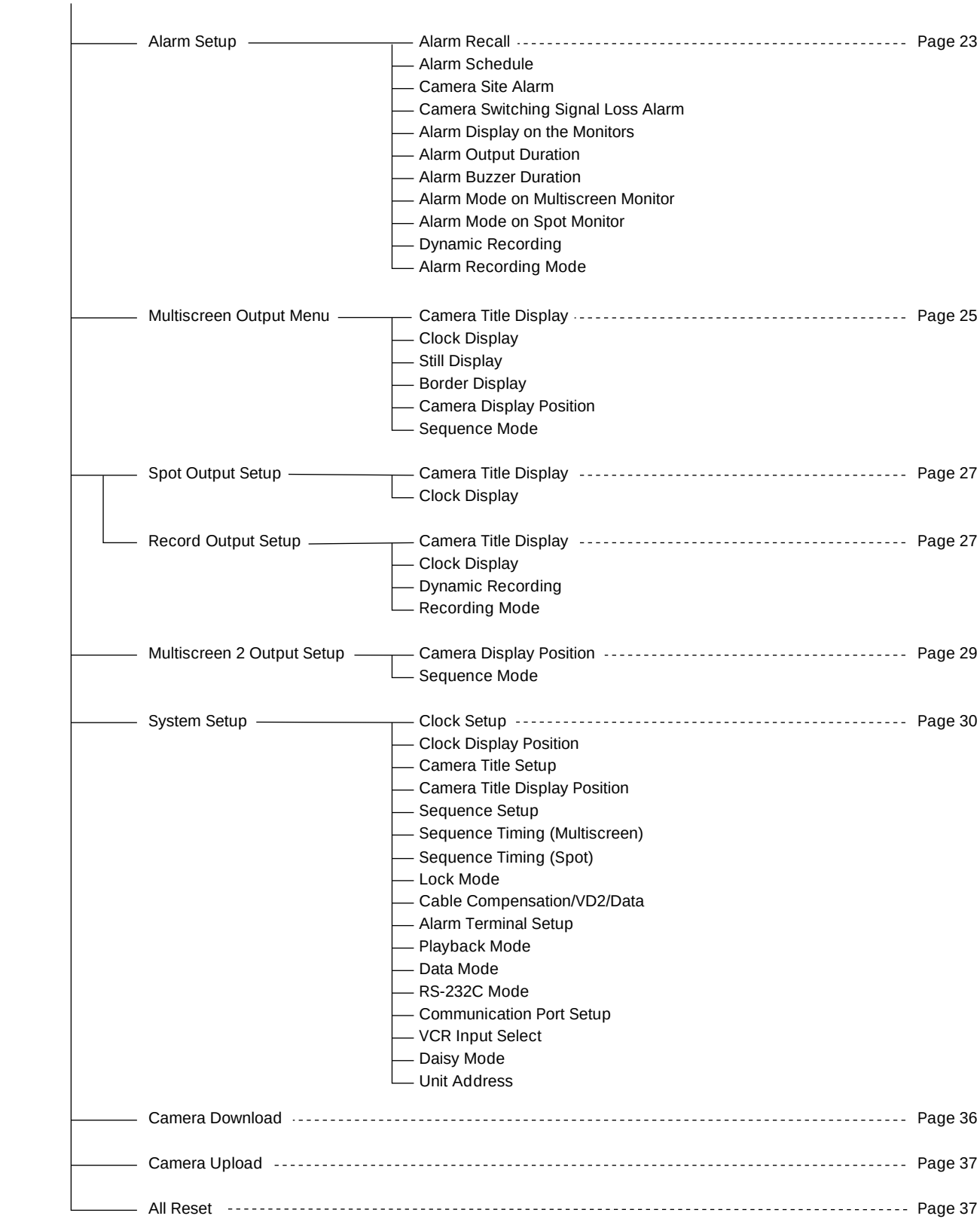
  Note: If alarm is activated during the setup operation, the SETUP menu disappears and the display returns to the normal picture. Any settings previously made take effect, even if the SET UP/ESC button was not pressed.

■ Setup Menu

As shown below, the SETUP MENU has nine main sub menus: Alarm Setup, Multiscreen Output Menu, Spot Output Setup, Record Output Setup, Multiscreen 2 Output Setup, System Setup, Camera Download, Camera Upload and All Rese.

Six of these sub menus; Alarm Setup, Multiscreen Output Setup, Spot Output Setup, Record Output Setup, Multiscreen 2 Output Setup and System Setup, are further divided into additional submenus.

SETUP MENU



■ Alarm Setup Menu

```
WJ-FS616 SETUP MENU

ALARM SETUP *
MULTI OUTPUT SETUP *
SPOT OUTPUT SETUP *
REC/MULTI2     REC OUTPUT *
SYSTEM SETUP *

CAM DOWNLOAD   NO
CAM UPLOAD     NO
ALL RESET SELECT *
```

Move the cursor to ALARM SETUP on the SETUP MENU, then press the SET button. The ALARM SETUP menu appears on the monitor screen as shown below.

```
ALARM SETUP

ALM RECALL *
ALM SCHEDULE   OFF
CAM SITE ALM   OFF
SW-LOSS ALM    OFF
ALM DISPLAY    ON
ALM OUTPUT DUR 2SEC
ALM BUZZER DUR 2SEC
ALM MODE-MLT   ALM-IND
  DWELL TIME   2SEC
ALM MODE-SPT   ALM-SPOT
DYNAMIC REC    OFF
ALM REC MODE   MODE0 REAL
```

1. Alarm Recall

There are 100 alarm records stored in chronological order in 10 pages of table.
The tables also indicate the alarm mode.

1. Move the cursor to ALM RECALL and press the SET button. The ALARM RECALL table appears on the monitor screen as shown below.

```
            ALARM RECALL        1 OF10

NO.    DATE       TIME   CAM  ALM-MODE
10. JAN  1. 97 12:00:00 16CH TRM 12
 9. DEC 12. 96  4:00:00 10CH SITE
 8. DEC 12. 96  3:00:00  8CH SITE
 7. DEC 12. 96  2:00:00  7CH SITE
 6. DEC 12. 96  1:00:00  6CH TRM  1
 5. DEC 11. 96 15:00:00  5CH TRM  5
 4. DEC 11. 96 14:00:00  4CH TRM 14
 3. DEC 11. 96 13:00:00  3CH TRM  7
 2. DEC 11. 96 12:00:00  2CH CH-LOSS
 1. DEC 11. 96 12:00:00  1CH CH-LOSS

DISPLAY         ( )NEXT ( )PRE
```

The table lists the active alarm modes (ALM-MODE) as follows:

TRM □:	Interface Alarm
CH-LOSS:	Video Input Signal Loss Alarm
SITE:	Camera Site Alarm
PC □:	PC Command Alarm

2. Press the UP button to select the next page.
3. Press the DOWN button to back up to the previous page.
4. To clear the alarm data, press the LEFT or RIGHT button to select CLEAR where the cursor is positioned, then press the SET button.
5. Press the SETUP/ESC button to return to the previous ALARM SETUP menu.

2. Alarm Schedule

This item lets you enable or disable the system alarm function.

1. Move the cursor to the ALM SCHEDULE parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is OFF.

   ON: Enables system alarm function.
   OFF: Disables system alarm function.

3. To set the timer, press the SET button while the cursor is located on ON.

```
ALARM SETUP

ALM RECALL *
ALM SCHEDULE   ON  0:00- 0:00
CAM SITE ALM   OFF
SW-LOSS ALM    OFF
ALM DISPLAY    ON
ALM OUTPUT DUR 2SEC
ALM BUZZER DUR 2SEC
ALM MODE-MLT   ALM-IND
  DWELL TIME   2SEC
ALM MODE-SPT   ALM-SPOT
DYNAMIC REC    OFF
ALM REC MODE   MODE0 REAL
```

4. Press the UP or DOWN button to move the cursor to the desired position, then adjust the time when the alarm is to be activated by pressing the LEFT or RIGHT button.
   You can set the timer to extend into the next day, for example, 22:00 - 6:00.
   Note: If the same time is set for start and stop time, the alarm is always enabled.
5. Press the SETUP/ESC button to move the cursor to ON position.

3. Camera Site Alarm

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

1. Move the cursor to the CAM SITE ALM parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is OFF.

   ON: Enables camera site alarm function.
   OFF: Disables camera site alarm function.

Note: To use this function, the WV-PB6164 Data Multiplex Boards must be installed in the Video multiplexer.

4. Camera Switching Pulse Loss Alarm

This item lets you enable or disable alarm display on the monitor screen when the camera switching pulse is lost.

1. Move the cursor to the SW-LOSS ALM parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is OFF.

   ON: Enables alarm display on the monitor screen.
   OFF: Disables alarm display on the monitor screen.

5. Alarm Display on the Monitors

This item lets you enable or disable alarm display on the Spot and Multiscreen Monitors.

1. Move the cursor to the ALM DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

   ON: Enables alarm display on the Monitors.
   OFF: Disables alarm display on the Monitors.

6. Alarm Output Duration

This item lets you select the duration of alarm signal output.
The alarm is automatically reset after the programmed duration has passed.

1. Move the cursor to the ALM OUTPUT DUR parameter.
2. Select the desired duration by pressing the LEFT or RIGHT button. The initial factory setting is 2 SEC.

   1SEC - 5MIN: Selects an alarm duration between 1 second and 5 minutes.
   EXT: Alarm continues until the ALARM RESET button is pressed or the external alarm reset signal is received.

7. Alarm Buzzer Duration

This item lets you select the ringing duration of the alarm buzzer when alarm is activated.

1. Move the cursor to the ALM BUZZER DUR parameter.
2. Select the desired duration by pressing the LEFT or RIGHT button. The initial factory setting is 2 SEC.

   OFF: Disables the alarm buzzer output.
   1SEC - 5 MIN: Selects a buzzer duration between 1 second and 5 minutes.
   EXT: The alarm buzzer continues to beep until the ALARM RESET button is pressed, or an external alarm recover signal is received.

8. Alarm Mode on Multiscreen Monitor

This item lets you select the mode for displaying an alarm on the Multiscreen Monitor.

1. Move the cursor to the ALM MODE-MLT parameter.
2. Select the desired mode by pressing the LEFT or RIGHT button. The initial factory setting is ALM-IND mode.

   ALM-LINK: Switches screen to the camera picture of the corresponding channel with an alarm title super- imposed.
   ALM-IND: Retains the camera picture currently selected. An alarm title appears overlapped on the camera picture. If no camera is currently selected the alarm title does not appear.

3. When ALM-LINK is selected on this menu, the cursor can be moved to DWELL TIME.

- **Dwell Time for Alarm Sequence**

If more than one alarm is activated when ALM-LINK is selected, the respective camera pictures are displayed on the Multiscreen Monitor in quad mode.
From the fifth alarm on, the pictures are displayed sequentially in quad mode.
This item lets you set the dwell time for the alarm sequence.

1. Move the cursor to DWELL TIME parameter.
2. Select the desired dwell time by pressing the LEFT or RIGHT button. The initial factory setting is 2 seconds.

   1SEC - 30SEC: Selects a dwell time between 1 second and 30 seconds.

9. Alarm Mode on Spot Monitor

This item lets you select the mode for displaying an alarm on the Spot Monitor.

1. Move the cursor to the ALM MODE-SPT parameter.
2. Select the desired mode by pressing the LEFT or RIGHT button. The initial factory setting is ALM-SPOT mode.

ALM-SPOT: The picture of the camera that has activated the alarm is displayed.
If multiple alarms are activated, the monitor displays the camera picture that has activated the alarm most recent.
ALM-IGNORE: Displays the title of alarm on the alarmed camera picture if that picture is selected on the Spot Monitor.

10. Dynamic Recording

In this mode, the camera picture of the channel on which the alarm was activated is recorded with more fields than in normal recording mode.
This item lets you enable or disable dynamic recording mode for recording on video tape.

1. Move the cursor to the DYNAMIC REC parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is OFF.

ON: Enables dynamic recording.
OFF: Disables dynamic recording.

11. Alarm Recording Mode

This item lets you select the mode for recording an alarm.
Refer to 4. Recording Mode on page 28 for more details.

1. Move the cursor to the ALM REC MODE parameter.
2. Select the desired mode by pressing the LEFT or RIGHT button. The initial factory setting is MODE 0.

MODE 0: Normal Recording
MODE 1-8: Time Lapse mode without camera switching pulse.
MODE 9: Time lapse mode with camera switching pulse.

After finishing the setting, press the SETUP/ESC button to return to the previous SETUP MENU.

■ Multiscreen Output Menu

```
        WJ-FS616 SETUP MENU

        ALARM SETUP *
        MULTI OUTPUT SETUP *
        SPOT OUTPUT SETUP *
        REC/MULTI2      REC OUTPUT *
        SYSTEM SETUP *

        CAM DOWNLOAD    NO
        CAM UPLOAD      NO
        ALL RESET SELECT *
```

Move the cursor to MULTI OUTPUT SETUP on the SETUP MENU, then press the SET button. The MULTI OUTPUT SETUP menu appears on the monitor screen as shown below.

These items let you determine the display mode of the Multiscreen Monitor.

```
          MULTI OUTPUT SETUP

        TITLE DISPLAY   ON
        CLOCK DISPLAY   ON
        STILL DISPLAY   ON
        BORDER          WHITE
        DISPLAY POSITION *
        SEQUENCE MODE   SEQ2
```

1. Camera Title Display

This item lets you enable or disable display of the camera title on the Multiscreen Monitor.

1. Move the cursor to the TITLE DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

ON: Enables display of the camera title on the monitor screen.
OFF: Disables display of the camera title on the monitor screen.

2. Clock Display Setting

This item lets you enable or disable the clock display on the Multiscreen Monitor.

1. Move the cursor to the CLOCK DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

   ON: Enables clock display on the monitor screen.
   OFF: Disables clock display on the monitor screen.

3. Still Display

This item lets you enable or disable display of the subtitle “STILL” on the Multiscreen Monitor when the channel is in the still mode.

1. Move the cursor to the STILL DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

   ON: Enables display of the subtitle “STILL” on the monitor screen.
   OFF: Disables display of the subtitle “STILL” on the monitor screen.

4. Border Display

This item lets you enable or disable the display of borders that divide the screen of the Multiscreen Monitor, or select a border color.

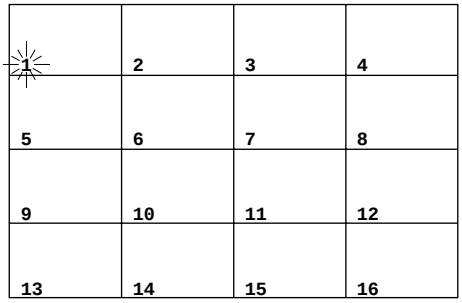
1. Move the cursor to the BORDER parameter.
2. Select the desired mode or color by pressing the LEFT or RIGHT button. The initial factory setting for the border color is WHITE.

   WHITE: White Border
   GRAY: Gray Border
   BLACK: Black Border
   OFF: No Border

5. Camera Display Position Setting

This item lets you select the position where the camera picture will be displayed on the Multiscreen Monitor.

1. Move the cursor to DISPLAY POSITION then press the SET button. The table shown below appears on the monitor.



2. Move the cursor to the desired channel number by pressing the UP or DOWN button.

3. Select the numbers of the cameras to be displayed by pressing the LEFT or RIGHT button. The pictures of the selected cameras are displayed one after another on the monitor screen.
   Note: The number can be assigned directly by pressing the Camera Number Buttons.

4. Press the SETUP/ESC button to return to the previous MULTI OUTPUT SETUP menu.
   Note: This operation only affects the camera display positions.
   It has no effect on the camera channel, recording order or sequence order.

6. Sequence Mode

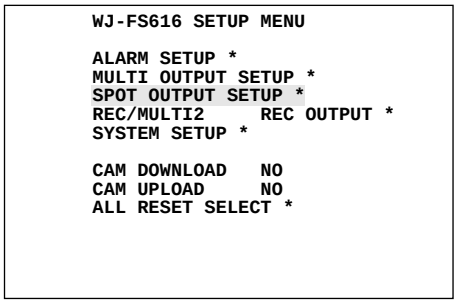
This item lets you select the sequence pattern for display on the Multiscreen Monitor.
Refer to Sequence Setup on page 31 for more details.

1. Move the cursor to the SEQUENCE MODE parameter.
2. Select the desired mode by pressing the LEFT or RIGHT button. The initial factory setting is SEQ2.

   SEQ1: Spot Sequence
   SEQ2: Multi Sequence
   SEQ3: Multi Sequence

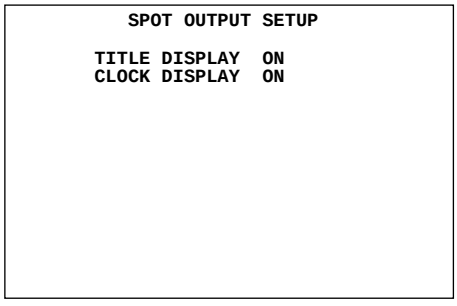
After finishing the setting, press the SETUP/ESC button to return to the previous SETUP MENU.

■ Spot Output Setup



Move the cursor to SPOT OUTPUT SETUP on the SETUP MENU, then press the SET button. The SPOT OUTPUT SETUP menu appears on the monitor screen as shown below.

These items let you determine the display mode of the Spot Monitor.



1. Camera Title Display

This item lets you enable or disable display of the camera title on the Spot Monitor.

1. Move the cursor to the TITLE DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

ON: Enables display of the camera title on the Spot Monitor screen.
OFF: Disables display of the camera title on the Spot Monitor screen.

2. Clock Display

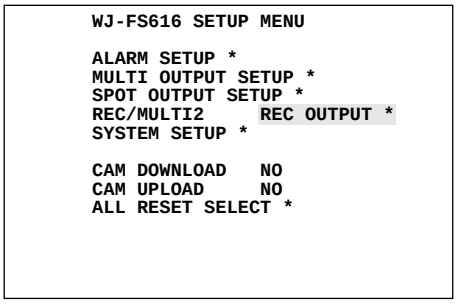
This item lets you enable or disable the clock display on the Spot Monitor.

1. Move the cursor to the CLOCK DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

ON: Enables clock display on the Spot Monitor screen.
OFF: Disables clock display on the Spot Monitor screen.

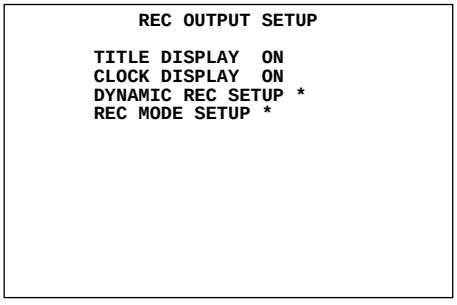
After finishing the setting, press the SETUP/ESC button to return to the previous SETUP MENU.

■ Record Output Setup



1. Move the cursor to the REC/MULTI2 parameter on the SETUP MENU.
2. Select REC OUTPUT by pressing the LEFT or RIGHT button, then press the SET button. The REC OUTPUT SETUP menu appears on the monitor screen shown below.

These items let you determine the mode for recording on the Time Lapse VCR.



1. Camera Title Display

This item lets you enable or disable recording of the camera title on the VCR.

1. Move the cursor to the TITLE DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

ON: Enables recording of the camera title on the VCR.
OFF: Disables recording of the camera title on the VCR.

2. Clock Display

This item lets you enable or disable recording of the clock display on the VCR.

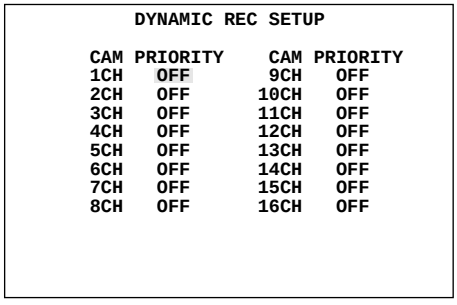
1. Move the cursor to the CLOCK DISPLAY parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

   ON: Enables recording of clock display on the VCR.
   OFF: Disables recording of clock display on the VCR.

3. Dynamic Recording

This item lets you select the cameras for dynamic recording mode in non-alarm condition.
If five or more cameras are connected to the Video Multiplexer, the channels selected for dynamic recording are recorded with priority.

1. Move the cursor to DYNAMIC REC SETUP then press the SET button. The DYNAMIC REC SETUP menu appears on the monitor screen as shown below.

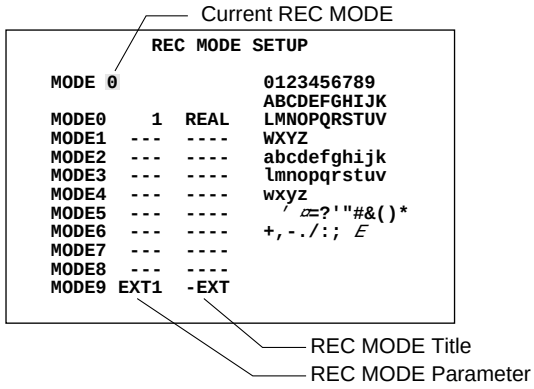


2. Move the cursor to the desired camera number to be recorded with dynamic recording in the PRIORITY area by pressing the Derection Arrow Buttons.
3. Select ON by pressing the Increment (+) or Decrement (–) button. The initial factory setting is OFF.
4. Repeat the above procedures 2 to 3 to set other cameras.
   Note: It is recommended to select up to 2 cameras.
5. Press the SETUP/ESC button to execute the setting and return to the REC OUTPUT SETUP menu.

Note: Recording is not done in dynamic recording mode when EXT4 is selected for MODE 9 in the recording mode setup shown below.

4. Recording Mode

Move the cursor to REC MODE SETUP, then press the SET button. The REC MODE SETUP menu appears on the monitor screen as shown below.



Recording Mode

1. Move the cursor to the MODE, parameter.
2. Select a mode number by pressing the LEFT or RIGHT button. The initial factory setting is “0”.

   MODE 0: Normal recording
   MODE 1 - 8: Time Lapse Mode (VCR without camera switching pulse)
   MODE 9: Time Lapse Mode (VCR with camera switching pulse)

   Note: To select MODE 1 - 8, you must first complete the settings described below.

Recording Mode Setting Details

You can assign the camera switching timing to any one of MODE1 to MODE8 when using the VCR without camera switching pulse.

1. Move the cursor to the desired MODE number to be assigned by pressing the UP or DOWN button.
2. Press the SET button to move the cursor to the switching timing area.
   Note: The cursor does not move to this area when MODE 0 is selected in this table.
3. Select the desired switching timing indicated as the field interval (4 to 999) by pressing the LEFT or RIGHT button.
   Notes:
   - Numbers can also be input directly with the Camera Number Buttons (1 - 10).
   - Refer to the operating instructions of the VCR for switching timing.

   When MODE9 is selected in this table, select EXT1 or EXT4 by pressing the LEFT or RIGHT button.

   EXT1: Enables spot picture recording on the VCR.
   EXT4: Enables quad picture recording on the VCR.

4. Press the SET button to move the cursor to the recording mode title area. The square cursor appears in the character table.
5. To select a character, move the cursor on the desired character in the table by pressing the Direction Arrow buttons.
6. Press the SET button to pick up the character and place it in the title area.
7. Repeat the above procedures 5 to 6 to set the title.
8. If a wrong character is selected, press the Increment (+) or Decrement (–) button to move the cursor in the title area.
   Note: Press the (+) button to move the cursor to the right, or press the (–) button to move the cursor to the left.
   Then press the SET button to overwrite the character with the character selected from the table.
9. Press the SETUP/ESC button. The cursor moves to MODE number.
10. Repeat the above procedures 1 to 9 to assign the other MODE numbers.
11. After completing the setting, press the SET UP/ESC button to return to the REC OUTPUT SETUP menu.

After finishing the setting, press the SETUP/ESC button to return to the previous SETUP MENU.

■ Multiscreen 2 Output Setup

These items let you select the mode when connecting the Record Output (REC OUT) to the monitor for Multiscreen 2 Monitor.

```
WJ-FS616 SETUP MENU

ALARM SETUP *
MULTI OUTPUT SETUP *
SPOT OUTPUT SETUP *
REC/MULTI2     MULTI2 OUTPUT *
SYSTEM SETUP *

CAM DOWNLOAD   NO
CAM UPLOAD     NO
ALL RESET SELECT *
```

1. Move the cursor to the REC/MULTI2 parameter on the SETUP MENU.
2. Select MULTI2 OUTPUT by pressing the LEFT or RIGHT button, then press the SET button. The MULTI2 OUTPUT SETUP menu appears on the monitor screen as shown below.

```
MULTI2 OUTPUT SETUP

DISPLAY POSITION *
SEQUENCE MODE  SEQ2
```

1. Camera Display Position

This item lets you select the position where the camera picture will be displayed on the Multiscreen Monitor 2.

1. Move the cursor to DISPLAY POSITION, then press the SET button. The table shown below appears on the monitor.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

2. Move the cursor to the desired channel number by pressing the UP or DOWN button.
3. Select the numbers of the cameras to be displayed by pressing the LEFT or RIGHT button. The pictures of the selected cameras are displayed one after another on the monitor screen.
   Note: Numbers can also be input directly with the Camera Number Buttons (1 - 10).
4. After completing the setting, press the SET UP/ESC button to return to the previous MULTI 2 OUTPUT SETUP menu.
   Note: This operation only affects the camera display positions.
   It has no effect on the camera channel, recording order or sequence order.

2. Sequence Mode

This item lets you select the sequence pattern for display on the Multiscreen Monitor 2.
Refer to Sequence Setup on page 31 for more details.

1. Move the cursor to the SEQUENCE MODE parameter.
2. Select the desired mode by pressing the LEFT or RIGHT button. The initial factory setting is SEQ2.
   SEQ1: Spot Sequence
   SEQ2: Multi Sequence
   SEQ3: Multi Sequence

After finishing the setting, press the SETUP/ESC button to return to the previous SETUP MENU.

■ System Setup

```
WJ-FS616 SETUP MENU

ALARM SETUP *
MULTI OUTPUT SETUP *
SPOT OUTPUT SETUP *
REC/MULTI2      MULTI2 OUTPUT *
SYSTEM SETUP *

CAM DOWNLOAD    NO
CAM UPLOAD      NO
ALL RESET SELECT *
```

Move the cursor to SYSTEM SETUP on the SETUP MENU, then press the SET button. The SYSTEM SETUP menu appears on the monitor screen as shown below.
Press the FUNCTION button to display the next page. Press this button again to return to the previous page.

```
          SYSTEM SETUP      1 OF 2

CLOCK SETUP     JAN 1.97  0:00
CLOCK POSITION *
TITLE SETUP *
TITLE POSITION *
SEQUENCE SETUP SEQ1 *
SEQ TIMING-MLT INT(TIME-ADJ)
SEQ TIMING-SPT INT
LOCK MODE       ALL
```

```
          SYSTEM SETUP      2 OF 2

CABLE COMP/VD2/DATA SETUP *
ALM TERMINAL SETUP *
PLAYBACK MODE   FIELD
DATA MODE       CU550A
RS-232C MODE    VCR
COM PORT SETUP *
VCR IN SELECT   VIDEO
DAISY MODE      OFF
UNIT ADDR.SET   1
```

1. Clock Setup

This item lets you set the current time and date.

1. Move the cursor to CLOCK SETUP, then press the SET button to move the cursor to the editing area.
2. Move the cursor to the area you want to edit by pressing the UP or DOWN button, then select the month or number by pressing the LEFT or RIGHT button.
3. After finishing the setting, press the SETUP/ESC button to move the cursor to CLOCK SETUP.
   Note: The date and time are updated when the SETUP/ESC button is pressed.

2. Clock Display Position

This item lets you select the position where the clock will be displayed on the monitor screen.

1. Move the cursor to CLOCK POSITION, then press the SET button. The position setting menu appears on the monitor screen as show below.

```
        DEC11.96 12:00:00

            CAMTITLE
```

2. Move the clock position by pressing the Direction Arrow Buttons.
   Note: In the Multiscreen display with display of the Record out signals, the clock display is shifted one line from the preset position if the Camera Title and the Clock are preset to the same position.
3. Press the SETUP/ESC button to execute the selection and return to the previous SYSTEM SETUP menu.

3. Camera Title Setup

This item lets you edit the camera title to be displayed on the monitor screen.
Up to 8 alphanumeric characters can be displayed on the monitor.

1. Move the cursor to TITLE SETUP, then press the SET button.
   The TITLE SETUP menu appears on the monitor screen as shown below.

```
          TITLE SETUP       1 OF 2

 1CH 1-------      0123456789
 2CH 2-------      ABCDEFGHIJK
 3CH 3-------      LMNOPQRSTUV
 4CH 4-------      WXYZ
 5CH 5-------      abcdefghijk
 6CH 6-------      imnopqrstuv
 7CH 7-------      wxyz
 8CH 8-------      ´¸=?'"#&()*
                   +,-./:; É
```

```
          TITLE SETUP       2 OF 2

 9CH 9-------      0123456789
10CH 10------      ABCDEFGHIJK
11CH 11------      LMNOPQRSTUV
12CH 12------      WXYZ
13CH 13------      abcdefghijk
14CH 14------      imnopqrstuv
15CH 15------      wxyz
16CH 16------      ´¸=?'"#&()*
                   +,-./:; É
```

Press the FUNCTION button to display the next page, then press this button again to return to the previous page.

2. Move the cursor to the channel you want to edit, then press the SET button.
   The cursor moves to the title area, and the square cursor appears on the character table.
3. To select a character, move the cursor on the desired character in the table by pressing the Direction Arrow buttons.
4. Then press the SET button to pick up the character, and place it in the title area.
5. Repeat the above procedures 3 to 4 until the title for a certain camera is completed.
6. If a wrong character is selected, press the Increment (+) or Decrement (–) button to move the cursor in the title area.
   Note: Press the (+) button to move the cursor to the right, or press the (–) button to move the cursor to the left.
   Then press the SET button to overwrite the character with the character selected in the table.
7. Press the SETUP/ESC button to move the cursor to the channel number area.
8. Repeat the above procedures 2 to 7 for the rest of the cameras.
9. Move the cursor to the channel area, then press the SETUP/ESC button to return to the previous SYSTEM SETUP menu.

4. Camera Title Display Position

This item lets you select the camera title position to be displayed on the monitor screen.
Refer to the Clock Display Position Setting on page 30 for more details.

1. Move the cursor to TITLE POSITION, then press the SET button. The position setting menu appears on the monitor screen.
2. Move the title by pressing the Direction Arrow Buttons.
   Note: In the Multiscreen display with display of the Record out signals, the clock display is shifted one line from the preset position if the Camera Title and the Clock are preset to the same position.
3. Press the SETUP/ESC button to execute the selection and return to the previous SYSTEM SETUP menu.

5. Sequence Setup

This item lets you program the sequence pattern for Spot or Multi Sequence.
You can either program a spot sequence (SEQ1) or two multi sequences (SEQ2, SEQ3).

● Spot Sequence (SEQ1)

This item lets you program or edit a Spot Sequence. Up to 32 steps can be assigned in the table shown below.
You can also enable the Auto Skip function to skip any steps where no video signal is present.
The duration of each step is determined by the Dwell Time setting.
The initial factory setting is sequential display of 16 camera pictures.

1. Move the cursor to the SEQUENCE SETUP parameter on the SYSTEM SETUP menu.
2. Select SEQ1 by pressing the LEFT or RIGHT button, then press the SET button. The setup menu shown below appears on the monitor screen.

```
      SEQ1(SPOT-SEQUENCE)SETUP 1 OF 2

    AUTO SKIP  OFF
    DWELL TIME 2SEC

STEP CAM PRE TIME   STEP CAM PRE TIME
  1  1CH  -  2SEC     9  9CH  -  2SEC
  2  2CH  -  2SEC    10 10CH  -  2SEC
  3  3CH  -  2SEC    11 11CH  -  2SEC
  4  4CH  -  2SEC    12 12CH  -  2SEC
  5  5CH  -  2SEC    13 13CH  -  2SEC
  6  6CH  -  2SEC    14 14CH  -  2SEC
  7  7CH  -  2SEC    15 15CH  -  2SEC
  8  8CH  -  2SEC    16 16CH  -  2SEC
```

Auto Skip

1. Move the cursor to the AUTO SKIP parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button.

ON: Enables the auto skip function.
OFF: Disables the auto skip function.

Note: The AUTO SKIP function is not available when playing back pictures.

Step Assigment

1. Move the cursor to the step number you want to edit in the CAM area by pressing the Direction Arrow button.
2. Select the desired camera or playback channel in the CAM area by pressing the Increment (+) or Decrement (–) button.

1 - 16: Camera Channel
P1 - P16: Playback Channel
–: Not Assigned

Notes:
- Pressing the Camera Number Buttons assigns the camera channel directly.
- Any playback steps programmed in a sequence are excluded from display on the Spot Monitor and Multiscreen Monitor 2 due to the way the system is designed.

3. Repeat the above procedures to assign other steps.

Preset Position

1. Move the cursor to the step number you want to edit in the PRE area by pressing the Derection Arrow Buttons.
2. Select the desired preset position number in the PRE area by pressing the Increment (+) or Decrement (–) button.
   Note: A preset position assigned to a step that has been assigned to a playback channel is invalid.
3. Repeat the above procedures to assign other steps.

Dwell Time

- **Uniform Dwell Time**
  1. Move the cursor to the DWELL TIME parameter.
  2. Select the desired dwell time by pressing the LEFT or RIGHT button.
     Dwell Time can be selected between 0SEC and 30SEC.
     Note: If 0SEC is selected for dwell time, the spot sequence is not activated.

- **Individual Dwell Time**
  1. Move the cursor to the step number you want to edit in the TIME area by pressing the Directon Arrow buttons.
  2. Select the desired dwell time by pressing the Increment (+) or Decrement (–) button.
     Steps for which a different dwell time has been selected are marked "–" in the DWELL TIME area. Previous settings made in the DWELL TIME area become invalid.

Programming Steps 17 to 32

1. Press the FUNCTION button to display the next page. The table shown below appears on the monitor screen.

```
      SEQ1(SPOT-SEQUENCE)SETUP 2 OF 2



STEP CAM PRE TIME  STEP CAM PRE TIME
 17   -   -  2SEC   25   -   -  2SEC
 18   -   -  2SEC   26   -   -  2SEC
 19   -   -  2SEC   27   -   -  2SEC
 20   -   -  2SEC   28   -   -  2SEC
 21   -   -  2SEC   29   -   -  2SEC
 22   -   -  2SEC   30   -   -  2SEC
 23   -   -  2SEC   31   -   -  2SEC
 24   -   -  2SEC   32   -   -  2SEC
```

2. Program the sequence pattern for steps 17 to 32 as described for the previous page.
3. Press the FUNCTION button to display the previous page.
4. After finishing the setting, press the SET UP/ESC button to execute the setting and return to the previous SYSTEM SETUP menu.

● Multi Sequence (SEQ2, SEQ3)

This item lets you program or edit a Multi Sequence. Up to 5 steps can be assigned in the table shown below.
You can also enable the Auto Skip function to skip any steps where no video signal is present.
The duration of each step is determined by the Dwell Time setting.
According to the initial factory setting, SEQ2 is displayed on four screen segments (quad) and SEQ3 on nine segments.

1. Move the cursor to the SEQUENCE SETUP parameter on the SYSTEM SETUP menu.
2. Select SEQ2 or SEQ3 by pressing the LEFT or RIGHT button, then press the SET button. The setup menu shown below appears on the monitor screen.

```
      SEQ2(MULTI-SEQUENCE)SETUP 1 OF 5
      AUTO SKIP  OFF
      STEP 1     CAM
      DWELL TIME 3SEC

      AREA  CAM PRE  AREA  CAM PRE
        1   1CH  -     9    -   -
        2   2CH  -    10    -   -
        3   3CH  -    11    -   -
        4   4CH  -    12    -   -
        5    -   -    13    -   -
        6    -   -    14    -   -
        7    -   -    15    -   -
        8    -   -    16    -   -
```

```
      SEQ3(MULTI-SEQUENCE)SETUP 1 OF 5
      AUTO SKIP  OFF
      STEP 1     CAM
      DWELL TIME 5SEC

      AREA  CAM PRE  AREA  CAM PRE
        1   1CH  -     9    -   -
        2   2CH  -    10    -   -
        3   3CH  -    11    -   -
        4   4CH  -    12    -   -
        5   5CH  -    13    -   -
        6   6CH  -    14    -   -
        7   7CH  -    15    -   -
        8   8CH  -    16    -   -
```

Auto Skip

1. Move the cursor to the AUTO SKIP parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button. The initial factory setting is ON.

   ON: Enables the auto skip function.
   OFF: Disables the auto skip function.

   Note: The AUTO SKIP function is not available when playing back pictures.

Camera / Playback

This item lets you select the camera or playback picture to be displayed at each step.

1. Move the cursor to the STEP parameter.
2. Select CAM or PLAY by pressing the LEFT or RIGHT button.

   CAM: Enables display of camera picture.
   PLAY: Enables display of playback picture.

Dwell Time

1. Move the cursor to the DWELL TIME parameter.
2. Select the desired dwell time by pressing the LEFT or RIGHT button.
   Dwell Time can be selected between 0SEC and 30SEC.
   Note: If 0SEC is selected for dwell time, that step will not be shown on the monitor screen.

Display Channel Assignment

1. Move the cursor to the area number you want to edit in the CAM area by pressing the Direction Arrow buttons.
2. Select the desired camera or playback channel in the CAM area by pressing the Increment (+) or Decrement (–) button.
3. Repeat the above procedures to assign other area numbers.
   Note:
   The multiscreen pattern of each step is determined automatically as follows:
   - For example, if several camra channels are assigned to area numbers, the screen segmentation that will accommodate the highest area number will be selected.
   - Areas not assigned a camera channel, or assigned a channel to which no camera is connected, are displayed in black.
   - Pressing the Camera Number Buttons assigns the camera channel directly.

Preset Position

1. Move the cursor to the area number you want to edit in the PRE area by pressing the Direction Arrow Buttons.
2. Select the desired preset position number in the PRE area by pressing the Increment (+) or Decrement (–) button.
   Notes:
   - When the STEP parameter in this table is on PLAY, it is not possible to select a preset position in the PRE area.
   - It is possible to assign the same camera channel to multiple area numbers within a step. In this case, make sure to assign the same preset positions.

Programming Steps 2 to 5

1. Press the FUNCTION button to display the next step.
2. Program the sequence pattern for steps 2 to 5 according to the procedures described above.
3. After completing the setting, press the SETUP/ESC button to execute the setting and return to the previous SYSTEM SETUP menu.

6. Sequence Timing (Multiscreen)

This item lets you select functions of devices connected to pin 26 of the ALARM/REMOTE Control Connector.

One of these functions is input of the time adjustment signal from a VCR, the other enables external sequence switching for multiscreen output.

1. Move the cursor to the SEQ TIMING-MLT parameter.
2. Select INT(TIME-ADJ) or EXT by pressing the LEFT or RIGHT button.

   INT: Advances a sequence by the Dwell Time that was programmed on the SEQUENCE SETUP menu.
   It enables input of the time adjustment signal from a Time Lapse VCR.
   EXT: Enables external sequence switching.

   Notes:
   - If EXT is selected, time adjustment input from a Time Lapse VCR is disabled.
   - If EXT is selected, connect the external sequence switch to pin 26 of the ALARM/REMOTE Control Connector.
   - The Mutiplexer accepts the time adjustment signal for 6 minutes, that is, 3 minutes before and 3 minutes after the exact time (For example, from 9:57:00 through 10:03:00. Time is adjusted to 10:00:00).

7. Sequence Timing (Spot)

This item let you select between internal and external control for advancing the sequence on the Spot Monitor.

1. Move the cursor to the SEQ TIMING-SPT parameter.
2. Select INT or EXT by pressing the LEFT or RIGHT button.

   INT: Advances a sequence by the Dwell Time that was programmed on the SEQUENCE SETUP menu.
   EXT: Advances a sequence by the input from pin 6 of the ALARM/REMOTE Control Connector.

8. Lock Mode

This item lets you decide which buttons will be locked while the LOCK switch is in ON position.

1. Move the cursor to the LOCK MODE parameter.
2. Select ALL or VCR by pressing the LEFT or RIGHT button. Initially, the initial factory setting is ALL.

   VCR: Locks the VCR Control Buttons.
   ALL: Locks all the buttons.

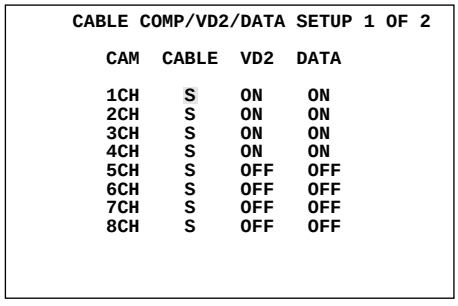
   Note: The LOCK indicator only lights up when the LOCK switch is in ON position and LOCK MODE is set to ALL.

9. Cable Compensation/VD2/ Data

This item lets you select the optimum setting for the cable-loss compensator and whether to supply the VD2 (sync) signal or control data to the camera.

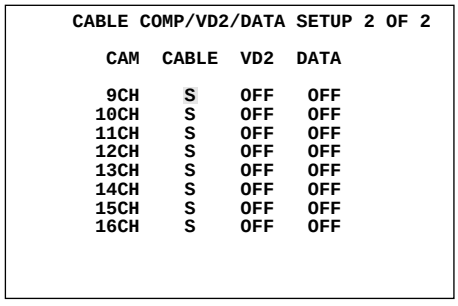
Note: These settings will work only for the input channels that have the multiplex feature with the Data Mutiplex Board WV-BP6164 installed. The boards are installed for input channels 1 through 4 at the factory. You can install boards for other channels. For installations, see page 10.

1. Move the cursor to CABLE COMP/VD2/DATA SETUP on the SYSTEM MENU, then press the SET button. The CABLE COMP/VD2/DATA SETUP table shown below appears on the monitor screen.



CABLE COMP/VD2/DATA SETUP 1 OF 2

CAM	CABLE	VD2	DATA
1CH	S	ON	ON
2CH	S	ON	ON
3CH	S	ON	ON
4CH	S	ON	ON
5CH	S	OFF	OFF
6CH	S	OFF	OFF
7CH	S	OFF	OFF
8CH	S	OFF	OFF



CABLE COMP/VD2/DATA SETUP 2 OF 2

CAM	CABLE	VD2	DATA
9CH	S	OFF	OFF
10CH	S	OFF	OFF
11CH	S	OFF	OFF
12CH	S	OFF	OFF
13CH	S	OFF	OFF
14CH	S	OFF	OFF
15CH	S	OFF	OFF
16CH	S	OFF	OFF

   Press the FUNCTION button to display the next page, then press this button again to return to the previous page.
2. Move the cursor to the channel you want to edit by pressing the Direction Arrow Buttons.
3. Select one of the parameters shown below in the CABLE area by pressing the Increment (+) or Decrement (–) button.

   S: Up to 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 the RG-59/U, BELDEN 9259 or equivalent cable.

   Note: Set CABLE to S if no camera is connected to the channel.

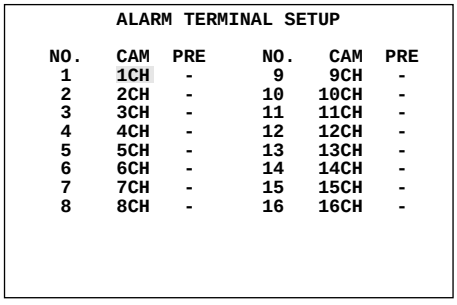
4. Select ON or OFF in the VD2 area by pressing the Increment (+) or Decrement (–) button.
   Note: Select ON for a camera with VD2 capability, otherwise select OFF.
5. Select one of the parameters shown below in the DATA area by pressing the Increment (+) or Decrement (–) button.
   ON: Communicates with the camera site by multiplexed data.
   1-16: Communicate with the camera site by RS-485.
   This number indicates the unit address of the selected camera.
   OFF: Disables communication with the camera site.

6. Repeat the above procedures to edit other channels.
7. Press the SETUP/ESC button to execute the setting and return to the previous SYSTEM SETUP menu.
   Note: Installation of the WV-PB6164 Data Multiplex Boards is required for controlling more than 4 cameras.

10. Alarm Terminal Setup

This item lets you edit the alarm input number corresponding to each channel.

1. Move the cursor to ALM TERMINAL SETUP on the SYSTEM SETUP menu, then press the SET button. The ALARM TERMINAL SETUP table shown below appears on the monitor screen.



ALARM TERMINAL SETUP

NO.	CAM	PRE	NO.	CAM	PRE
1	1CH	-	9	9CH	-
2	2CH	-	10	10CH	-
3	3CH	-	11	11CH	-
4	4CH	-	12	12CH	-
5	5CH	-	13	13CH	-
6	6CH	-	14	14CH	-
7	7CH	-	15	15CH	-
8	8CH	-	16	16CH	-

2. Move the cursor to the number you want to edit by pressing the Derection Arrow Buttons.
3. Select the channel to be assigned in the CAM area by pressing the Increment (+) or Decrement (–) button.
   Note: Channel numbers can also be input directly with the camera Number Buttons.
4. Select the preset position number to be assigned in the PRE area by pressing the Increment (+) or Decrement (–) button.
5. Repeat the above procedures to assign other terminal numbers.
6. Press the SETUP/ESC button to execute the setting and return to the previous SYSTEM SETUP menu.
   Note: The same channel can be assigned to multiple alarm terminals.
   In this case, different preset positions can be assigned, but when alarm occurs at these positions, the camera moves to the preset position where the most recent alarm occurred.

11. Playback Mode

This item lets you select the ID code for playback of recorded video tape.

1. Move the cursor to the PLAYBACK MODE parameter.
2. Select FIELD or FS10 by pressing the LEFT or RIGHT button.
   The initial factory setting is FIELD.

   FIELD: Normal position.
   FS10: Enables playback of a tape that is recorded on the WJ-FS10.

12. Data Mode

This item lets you select an external controller from the data port.

1. Move the cursor to the DATA MODE parameter.
2. Select CU550A or PC by pressing the LEFT or RIGHT button.

   CU550A: Enables control from the WV-CU550A System Controller.
   PC: Enables control from a PC.

   The initial factory setting is CU550A.

13. RS-232C Mode

This item lets you select the RS-232C port for control of the VCR, or for external control of the system from a PC.

1. Move the cursor to the RS-232C MODE parameter.
2. Select VCR or PC by pressing the LEFT or RIGHT button.

   VCR: Enables use as VCR control port.
   PC: Enables use as external control port from a PC.

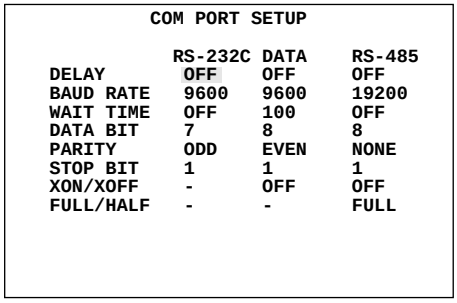
   The initial factory setting is VCR.

   Note: Be sure to select PC on this menu if you plan to use the REMOTE OUT connector for controlling the VCR.

14. Communication Port Setup

This item lets you set the parameters for communication between the ports and the connected appliances.

1. Move the cursor to COM PORT SETUP, then press the SET button. The COM PORT SETUP table shown below appears on the monitor screen.



2. Move the cursor to the port you want to edit by pressing the Direction Arrow Buttons.
3. Select the desired Delay Time in the DELAY area by pressing the Increment (+) or Decrement (–) button.
4. Select the desired Baud Rate in the BAUD RATE area by pressing the Increment (+) or Decrement (–) button.
5. Select the desired Wait Time in the WAIT TIME area by pressing the Increment (+) or Decrement (–) button.
6. Select 7 or 8 in the DATA BIT area by pressing the Increment (+) or Decrement (–) button.
7. Select the desired Parity Check in the PARITY area by pressing the Increment (+) or Decrement (–) button.
8. Select 1 or 2 in the STOP BIT area by pressing the Increment (+) or Decrement (–) button.
9. Select ON or OFF in the XON/XOFF area by pressing the Increment (+) or Decrement (–) button. (except RS-232C)
10. Select FULL or HALF Duplex in the FULL/HALF area by pressing the Increment (+) or Decrement (–) button. (RS-485 only)
11. Repeat the above procedures to edit other ports.
12. Press the SETUP/ESC button to execute the setting and return to the previous SYSTEM SETUP menu.

15. VCR Input Select

This item lets you select the VCR input terminal.

1. Move the cursor to the VCR IN SELECT parameter.
2. Select VIDEO or S-VIDEO by pressing the LEFT or RIGHT button.

   VIDEO: Selects input from the VCR VIDEO terminal.
   S-VIDEO: Selects input from the VCR S-VIDEO terminal.

   The initial factory setting is VIDEO.

16. Daisy Mode

This item lets you select whether to have the video signal connected to SPOT IN looped through to the SPOT OUT connector (daisy-chain connection).

1. Move the cursor to the DAISY MODE parameter.
2. Select ON or OFF by pressing the LEFT or RIGHT button.

   ON: Select this parameter if the Video Multiplexer is daisy-chained.
   OFF: Normal position.

   The initial factory setting is OFF.

17. Unit Address

This item lets you assign a unit number for identification when multiple Video Multiplexers are connected in a system.

1. Move the cursor to the UNIT ADDR. SET parameter.
2. Select the desired unit number by pressing the LEFT or RIGHT button.
   The initial factory setting is 1.

After finishing the settings, press the SETUP/ESC button to execute the settings and return to the previous SETUP MENU.

■ Camera Download

This item lets you save the camera setup data into the memory of the Video Multiplexer.
If the setup contents of the camera should be lost due to malfunctioning or replacement of a camera, you can simply reload the data stored in the Video Multiplexer.

1. Move the cursor to the CAM DOWNLOAD parameter in the SETUP MENU.
2. Select YES by pressing the LEFT or RIGHT button, then press the SET button
   The CAM DOWNLOAD table shown below appears on the monitor screen.

```
          CAM DOWNLOAD

     DOWNLOAD          1CH  NO

CAM    1  2  3  4  5  6  7  8
DATA  O+  - O+  -  - N-  +  -

CAM    9 10 11 12 13 14 15 16
DATA   -  -  -  -  -  -  -  -

   O:RESULT OK  +:DATA EXISTENCE
   N:RESULT NG  -:DATA NOTHING

CAUTION:ALL ALARM INPUTS
        HAVE BEEN DISABLED.
```

3. Select the channel you want to edit by pressing the LEFT or RIGHT button.

   1CH - 16CH: Enables storing of setup data for the selected camera channel.
   ALL: Enables storing of setup data for all camera channels.

   Note: Channel numbers can also be input directly with the Camera Number Buttons.

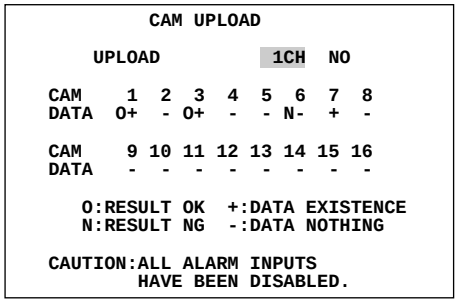
4. Move the cursor to “NO” by pressing the UP or DOWN button.
5. Select “YES“ by pressing the LEFT or RIGHT button.
6. Press the SET button to begin loading. “NOW LOADING” appears on the table.
   To cancel loading, press the SETUP/ESC button.
7. When loading is finished, the result is displayed for each channel.
8. Press the SETUP/ESC button, then system will restart.

Note: Alarm is disabled while this menu is displayed.

■ Camera Upload

This item lets you upload camera setup data from the Video Multiplexer's memory to a camera.

1. Move the cursor to the CAM UPLOAD parameter in the SETUP MENU.
2. Select YES by pressing the LEFT or RIGHT button, then press the SET button.
   The CAM UPLOAD table shown below appears on the monitor screen.



3. Select the channel you want to edit by pressing the LEFT or RIGHT button.

   1CH - 16CH: Enables data uploading to a selected camera.
   ALL: Enables data uploading to all cameras.

   Note: Channel numbers can also be input directly with the Camera Number Buttons.

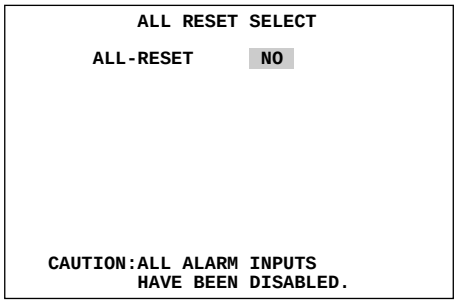
4. Move the cursor to "NO" by pressing the UP or DOWN button.
5. Select "YES" by pressing the LEFT or RIGHT button.
6. Press the SET button to begin the load. "NOW LOADING" appears on the table.
   To cancel loading, press the SETUP/ESC button.
7. When loading is finished, the result is displayed for each channel.
8. Press the SETUP/ESC button, then system will restart.

Note: Alarm is disabled while this menu is displayed.

■ All Reset

This item lets you restore the factory settings without having to go through each individual menu.

1. Move the cursor to ALL RESET SELECT on the SETUP MENU, then press the SET button. The ALL RESET SELECT menu shown below appears on the monitor screen.



2. Select "YES" by pressing the LEFT or RIGHT button.
3. Press the SET button to execute the All Reset function.
4. First "NOW RESETTING" appears, then "RESET COMPLETED".
5. Press the SETUP/ESC button to return to the SETUP MENU.

   Note: Alarm is disabled while the ALL RESET menu is displayed.

MONITOR CONTROL FUNCTION

Before starting the following procedures, all system components should be turned on.
Then set the LOCK switch to the OFF position.

■ Operating the Spot Monitor

The following operations are available on the Spot Monitor.

● Displaying the Camera Picture

1. Single Spot

1. Press the **SPOT** button. The LED (green) on the button lights up.

2. Press a **CAMERA (1 - 16)** button to display a selected camera picture on the monitor screen.
   The LED on the selected CAMERA button lights up.

2. Spot Sequence

1. Press the **SPOT** button. The LED (green) on the button lights up.
2. Press the **SEQUENCE** button to activate the sequence (SEQ1) programmed.

   The LED on the SEQUENCE button lights up.
   Note: Refer to the Sequence Setup on page 31 for more details.

3. Press the **SEQUENCE** button to move one step forward in the sequence.

4. To cancel the sequence, press the respective **CAMERA** button again.
   The selected camera picture is displayed in spot mode.

■ Operating the Multiscreen Monitor

The following operations are available on the Multiscreen Monitor.
Note: We recommend to use the Single Spot when displaying non-interlace pictures, for instance, the Menu screen of the WJ-SX550, to prevent picture disturbance.

● Displaying the Camera Picture

1. Single Spot

1. Press the **MULTISCREEN** button. The LED (green) on the button lights up.

2. Press the **VCR/CAM** button to **CAM** position (LED off).

3. Press a **CAMERA (1 - 16)** button to display a selected camera picture on the monitor screen.
   The LED on the selected CAMERA button lights up.

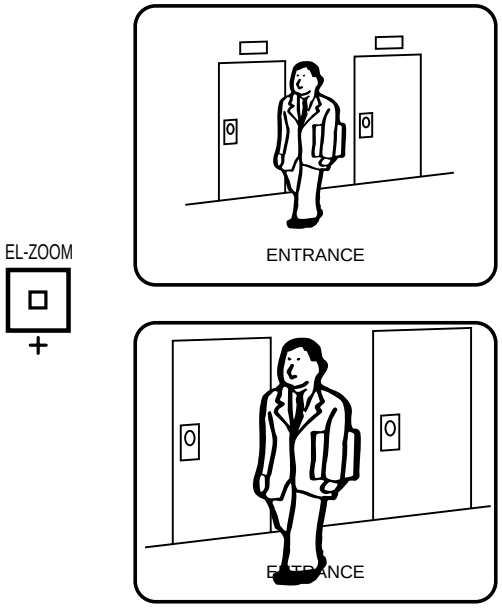
2. Single Still

1. Repeat the step 1 - 3 described above for Single Spot.
2. Press the **STILL** button to freeze the displayed picture.

   The LED on the STILL button lights up, and the LED on the pressed CAMERA button starts to blink.
   The camera title and “STILL” (both blinking) alternate in the display.
3. To cancel the still picture, press the **STILL** button again.
   The selected camera picture is displayed in spot mode.

3. Electronic Zooming

1. Repeat the procedures described above for Single Spot.
2. Press the **EL-ZOOM** button to display the zoomed picture.
   The LED on the EL-ZOOM button lights up.

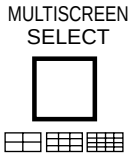


3. Press the **UP, DOWN, LEFT** or **RIGHT** button to move the picture in the desired direction.
   Note: Operating these buttons beyond the picture range activates control of the pan/tilt head.

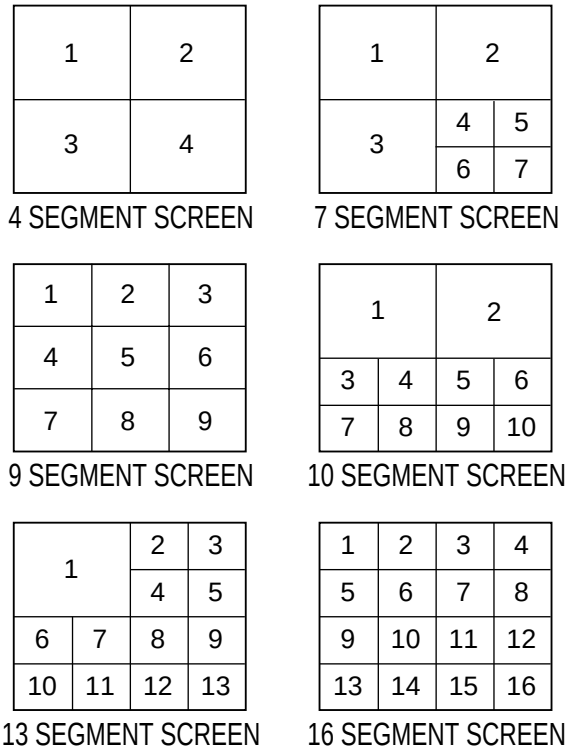
4. To cancel this mode, press the **EL-ZOOM** button again.
   The selected camera picture is displayed in spot mode, and the LED on the EL-ZOOM button goes off.

4. Multi Spot

1. Repeat steps 1 and 2 described for Single Spot on page 38.
2. Press the **MULTISCREEN SELECT** button repeatedly.



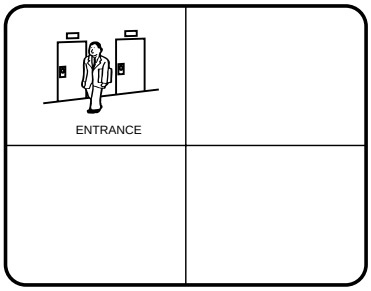
Each time the MULTISCREEN SELECT button is pressed, the next of the 6 available multiscreens is displayed as follows.

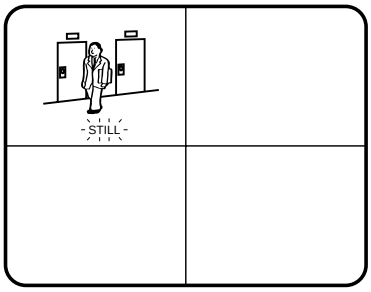


Notes:
- Blank channels are displayed in black.
- Dividing patterns and segment numbers are shown above.
- Any camera can be assigned to any segment in a pattern.

5. Multi Still

1. Repeat steps 1 and 2 described for Single Spot on page 38.
2. Press the **MULTISCREEN SELECT** button repeatedly to display the desired multiscreen.
   The divided screens appear on the monitor screen.
3. Press the **STILL** button. The LED on the button lights up.
4. Press the **CAMERA** button corresponding to the picture you want to be stilled.
   The LED on the pressed CAMERA button starts to blink.





Note: You can stilled multiple pictures on the multiscreen.

5. Press the blinking **CAMERA** button to cancel the Still function.
6. Press the **STILL** button again. The displayed pictures returns to normal viewing.
   The LED on the STILL button goes off.

6. Spot or Multi Sequence

1. Press the **MULTISCREEN** button. The LED (green) on the button lights up.
2. Press the **SEQUENCE** button to activate the sequence (SEQ1, SEQ2 or SEQ3) programmed. The LED on the SEQUENCE button lights up.
   Note: Refer to the Sequence Setup on page 31 for more details.

   SEQ1: Spot Sequence
   SEQ2: Multi Sequence
   SEQ3: Multi Sequence

3. Press the **SEQUENCE** button to move one step forward in the sequence.
4. To cancel the sequence, press one of the following buttons:

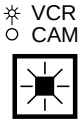
   CAMERA: Displays the selected camera picture in Single Spot mode.
   MULTISCREEN SELECT:
   Displays a Multi Spot picture.

● Displaying the Playback Picture

The following procedures are not applicable to the Multiscreen 2 Monitor.

1. Press the **MULTISCREEN** button. The LED (green) in the button lights up.

2. Press the **VCR/CAM** button to **VCR** position (LED on).



Notes:

- This unit does not reproduce a clear picture in reverse playback.
- The playback picture may be skewed (horizontally distorted) in the upper portion of the monitor screen depending on the selected playback mode.
- The LED on the VCR/CAM button blinks when no signal is input to the PLAY IN connector. The LED also blinks if the codes (camera numbers, etc.) recorded on the VCR tape track have not been read for some reason. In this case, the playback picture is displayed simply by tracing along the tape. Skipping instructions or other selections are ignored.
- The looped through VCR output may appear on the monitor while playing back a tape in forward or reverse search.
- The picture or title may become unstable because of the recording field rate.
- Depending on the condition of the VCR's video heads, the pictures of another channel may appear on the monitor.
  If this occurs frequently, adjust the tracking and slow tracking of the VCR.
- The size of pictures displayed on the multiscreen is smaller than in single picture format, which makes the titles hard to read. Select single picture (spot) to make titles easier to read.
- Playback in linear mode (L12H, L18H, L24H) may produce noise or the picture of another channel in any recorded mode. Play back the tape in normal (real time mode) or time lapse mode.
- Select FS10 in the SETUP MENU to play back a tape recorded with the WJ-FS10. (See page 35)
  It is recommended to play back on the 16-segment screen and select the desired camera channel from the pictures displayed, because a tape recorded with the WJ-FS10 Multiplexer is not compatible with one recorded on the WJ-FS616 (the camera display channels for recording and playback differ).

1. Single Spot

1. Repeat steps 1 and 2 above.
2. Press the desired **CAMERA** button **(1 - 16)** corresponding to the picture you want to display. The selected playback picture is displayed on the monitor screen.

Note:

- Blank channels are displayed in black.
- While playing back quad pictures, the corresponding 4-segment picture is displayed, if the selected number is recorded as part of the quad picture. For instance, if #5 is selected, the quad picture of "5-6-7-8" is displayed.

2. Single Still

Proceed as described in "Displaying the Camera Picture, 2. Single Still" on page 38.
Confirm that the LED on the VCR/CAM button is lit.

Note: The VCR does not enter pause mode when the playback picture is stilled.

3. Electronic Zooming

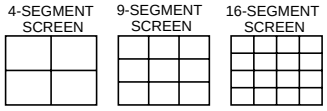
Proceed as described in "Displaying the Camera Picture, 3. Electronic Zooming" on page 39.
Confirm that the LED on the VCR/CAM button is lit.

4. Multi Spot

Proceed as described in "Displaying the Camera Picture, 4. Multi Spot" on page 39.
Confirm that the LED on the VCR/CAM button is lit.

Notes:

- The 7-, 10-, and 13-segment multiscreen modes are not available in playback mode.



- Segments assigned to channels where no recording takes place appear black.
- The same channel cannot be displayed in multiple segments.
  If this attempt is made, only the picture of the channel with the lowest number is displayed; the other segments appear black.
- Do not press the MULTISCREEN SELECT button while a 4-segment picture is played back, since this will cause picture disturbance.

5. Multi Still

Proceed as described in "Displaying the Camera Picture, 5. Multi Still" on page 39.
Confirm that the LED on the VCR/CAM button is lit.

6. Spot or Multi Sequence

Proceed as described in "Displaying the Camera Picture, 6. Spot or Multi Sequence" on page 40.
Confirm that the LED on the VCR/CAM button is lit.
The LED on the VCR/CAM button lights up while the playback picture is displayed.

Note: The same channel cannot be displayed in multiple segments.
If this attempt is made, only the picture of the channel with the lowest number is displayed; the other segments appear black.

● Displaying the Camera and Playback Picture

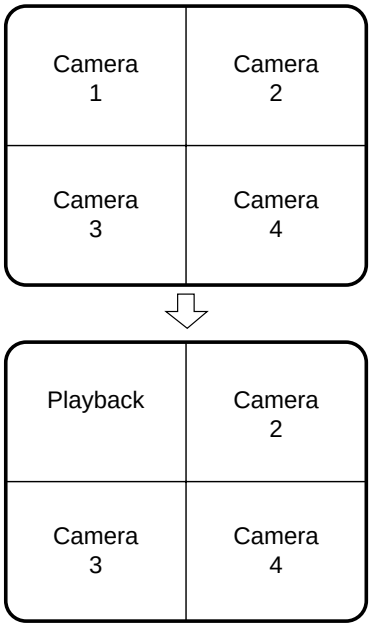
The following procedures are not applicable to the Multiscreen 2 Monitor.

- One segment of the multiscreen for camera pictures can be assigned to playback.
- This function is available with the 4-, 7-, 10- and 13-segment multiscreen modes.
- The playback picture will be displayed in the upper left segment of the multiscreen.

1. Multi Spot

1. Press the **MULTISCREEN SELECT** button. The LED (green) on the button lights up.
2. Press the **VCR/CAM** button to **CAM** position (LED off).
3. Confirm that the 4-, 7-, 10- or 13-segment multiscreen is selected for the camera pictures.
   If not, press the **MULTISCREEN SELECT** button repeatedly until the desired multiscreen appears.
4. Press the **FUNCTION** button. The LED on the button starts to blink.

5. Select the playback channel you want to display by pressing the corresponding **CAMERA** button.
   The LED on the FUNCTION button lights, and the selected playback picture is displayed in the upper left segment of the multiscreen.



Notes:
- This function is not available when S-VIDEO playback input is used.
- To enable this function, connect with the VIDEO playback input at the same time. The VIDEO playback picture is displayed automatically without making any setting changes.

6. To display another playback picture, press the **FUNCTION** button.
   The LED on the button starts to blink. Select the channel you want to display by pressing the corresponding **CAMERA** button.
7. To return to the camera picture multiscreen, press the **MULTISCREEN SELECT** button.
   To display the playback picture in Single Spot mode,press the **VCR/CAM** button.

Note: To return to the previous camera picture multiscreen, press the FUNCTION button while the LED in the button is blinking.

2. Multi Still

Repeat the above procedure. Then proceed as described in "Displaying the Camera Picture, 5. Multi Still" on page 39.

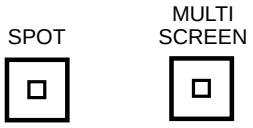
Note: You cannot freeze the displayed playback picture on the monitor screen.

CAMERA CONTROL FUNCTION

The camera control is only available while the camera picture is displayed in Single Spot on the selected monitor screen and the LOCK switch is in OFF position.

■ Camera Selection

1. Press the **SPOT** or **MULTISCREEN SELECT** button. The LED (green) on the button lights up.



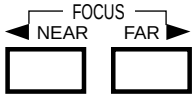
2. Press the **VCR/CAM** button to **CAM** position (LED off).

3. Press a **CAMERA (1 - 16)** button to display a selected camera picture in Single Spot on the monitor screen.
   The LED on the selected CAMERA button lights up.

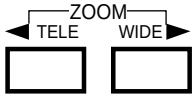
■ Controlling System Accessories

1. Lens Control

1. Select the desired camera referring to the Camera Selection procedure described above.
2. Press the **FOCUS** button and adjust the lens focus to obtain a sharply focused picture while observing the monitor.

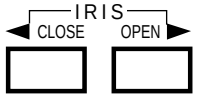


   If the specified camera with auto focus feature is used, press both of these buttons simultaneously to adjust the lens focus automatically.
3. Press the **ZOOM** button and adjust the lens zoom to obtain the desired picture while observing the monitor.



   Press the **TELE** button to optically bring an object closer. Pressing the **WIDE** button has the reverse effect.

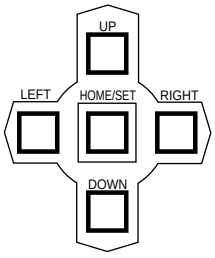
4. Press the **IRIS** buttons to close or open the lens iris. Adjust the lens iris by using the buttons to obtain the proper picture exposure.



By pressing both of these buttons at the same time, the lens iris is reset to the initial factory settings.

2. Pan/Tilt Control (Manual Operation)

1. Select the desired camera referring to the Camera Selection procedure described on page 42.
2. Press the Direction Arrow buttons to move the pan/tilt head in the desired direction.
   Pressing the **UP** and **RIGHT** buttons will move the pan/tilt head upwards and to the right.



Note: To move the pan/tilt head faster, press the **HOME/SET** button while holding down the Direction Arrow Buttons.

3. Pan/Tilt Control (Preset Operation)

The following functions are available only with cameras that have preset panning functions, such as the Panasonic WV-BS500 or WV-CS600 series.
Note: Select only preset position numbers 1 to 16.

1. Select the desired camera referring to the Camera Selection procedure described on page 42.
2. Press the **PRE-POSI** button.

3. Press the **CAMERA(1 - 16)** buttons to select the preset position number and move the pan/tilt head to the preset position.
   Note: Select a number from 1 through 16. (“17” is not allowed.)

4. Auto Panning

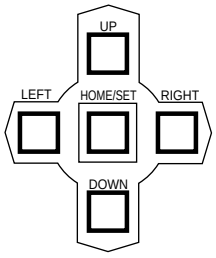
The following function is available only when the specified Pan/Tilt Head is used.

1. Select the desired camera referring to the Camera Selection procedure described on page 42.
2. Press the **AUTO** button to activate the auto panning function.
3. To cancel the auto panning function, press one of the Direction Arrow Buttons.
   Note: When using AUTO PANNING with combination cameras, make sure that the LOCAL/REMOTE selection is set to LOCAL at the camera site. If REMOTE is selected, the panning movement is retained for only one minute.

5. Home Position Selection

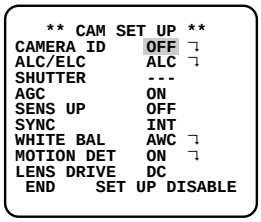
The following functions are available only with cameras that have preset panning functions, such as the Panasonic WV-BS500 or WV-CS600 series.

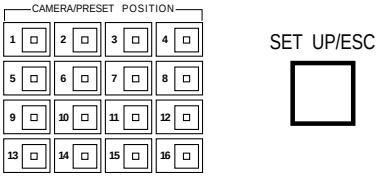
1. Select the desired camera referring to the Camera Selection procedure described on page 42.
2. Press the **HOME/SET** button to move the camera to the home position.



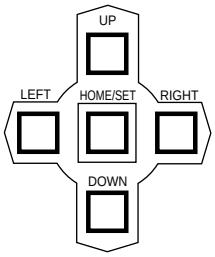
6. Camera Setup

1. Select the desired camera referring to the Camera Selection procedure described on page 42.
2. Press the **SETUP/ESC** button, while holding down the selected **CAMERA** button, to access the Camera SetUp Menu.

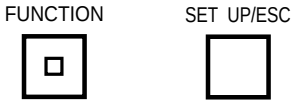




3. Select the desired item by pressing the **UP** or **DOWN** button. Then select the desired mode by pressing the **LEFT** or **RIGHT** button.



4. Press the **HOME/SET** button to execute the setting or enter a sub menu.
5. Press the **LEFT** and **RIGHT** buttons simultaneously to reset the selected menu.
6. Press the **SETUP/ESC** button to execute the setting and return to the previous menu.
7. Press the **SETUP/ESC** button, while holding the **FUNCTION** button, to escape from the setup mode or menu.



Note: Refer to the operating instructions of the selected camera for more details.

Caution: Camera addresses are important for RS-485 type cameras.
1. Do not use addresses other than 1 through 16 for individual cameras. (“17” is not allowed)
2. Do not set a single address for more than one camera in an RS-485 chain.

- **Simplified preset position setting**
  The preset position can be set by a simplified procedure.
  The following functions are available only with cameras that have preset panning functions, such as the panasonic WV-BS500 or WV-CS600 series.
  1. Press the **FUNCTION** button while the position setting menu is displayed.
  2. Press the Direction Arrow buttons to move the pan/tilt head in the desired direction.
  3. Press the **FOCUS** or **ZOOM** button to adjust the lens to obtain the desired picture.
  4. Press the **FUNCTION** button again to restore the Direction Arrow buttons’ cursor control function.

ALARM CONTROL FUNCTION

■ Alarm Input

The Video Multiplexer can handle the following alarms:

- **Interface Alarm**
  Alarm received from the Alarm/ Remote Control Connector.
  “ALARM” is displayed on the monitor screen.
- **Video Input Signal Loss Alarm**
  Alarm indicating that camera signal loss has occurred.
  "CH□□ LOSS" is displayed on the monitor screen.
- **Camera Site Alarm**
  Alarm received from the associated camera site receiver or camera.
  “ALARM” is displayed on the monitor screen.
- **PC Command Alarm**
  OAI command received from the Personal Computer.
  “ALARM” is displayed on the monitor screen.

■ Alarm Operation

When an alarm is activated, the multiplexer, the Record Output, Spot Output of the multiplexer and Multiscreen Output of the multiplexer are activated as shown below.
Refer to the ALARM SETUP menu of the SETUP MENU on page 23 for settings.

● WJ-FS616 Multiplexer

1. Front Panel Display

When an alarm is activated, the Alarm Indicator (Red) and the corresponding Camera Number Button (Green) blink.
The Alarm Output signal is supplied to pin 9 of the ALARM/REMOTE Control connector for the programmed duration.
After the programmed Alarm Output Time has elapsed, the indicator lights up.
If another alarm is activated during output of the previous alarm, alarm is output for the programmed duration.

2. Alarm Buzzer

The buzzer beeps for the programmed duration.
The buzzer stops beeping before that duration when the alarm is reset.

3. Alarm Log

There are 100 alarm records stored in chronological order in 10 pages of table.
If more than 100 alarms are received, the oldest record is overwritten.
The tables also indicate the alarm mode.

4. Camera Preset Movement

Enables movement of the camera to the preset position that was specified in the ALARM TERMINAL SETUP table of the SYSTEM SETUP menu.
Refer to the setup on page 34.

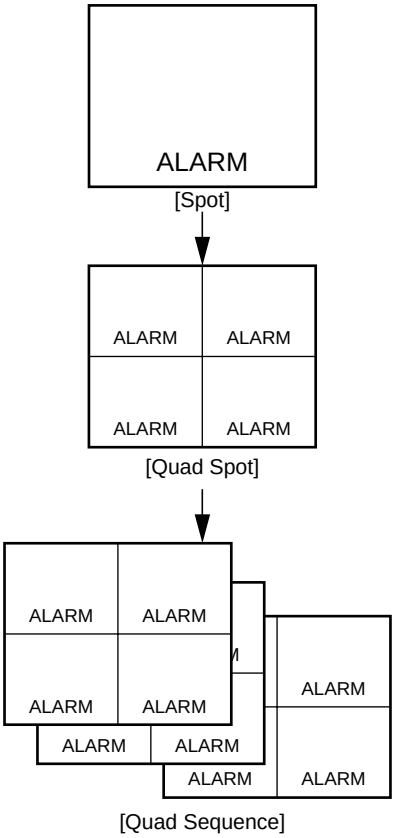
● Record Output

- Alarms are recorded in the mode specified for the ALM REC MODE parameter on the ALARM SETUP menu.
- Alarmed channels are recorded with more fields than in normal recording if ON is specified for the DYNAMIC REC parameter in the ALARM SETUP menu.

● Multiscreen Output

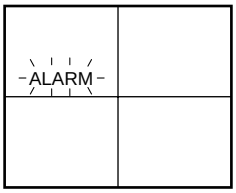
1. Alarm Link Mode

- The picture of the alarmed camera is displayed in Single Spot mode on the multiscreen monitor. The LED on the corresponding CAMERA button blinks.
- When multiple alarms are activated, the pictures of the alarmed cameras are displayed on a quad screen in the order of upper left to lower right segment. From the fifth alarm on, the pictures are overwritten in the order of upper left to lower right segment, then displayed in sequence with the previous quad pictures.
- The Dwell Time for each step can be programmed on the ALARM SETUP menu.
- An incomplete picture may appear when switching the 4-segment screen sequence.



2. Alarm Indication Mode

- The camera pictures selected before alarm was activated remain on the monitor screen.
- If the alarmed channels are displayed, the camera title and alarm display blink alternately on the monitor screen.



Note: If the alarm channel is in the Still mode, it returns to normal viewing.

● Spot Output

1. Alarm Spot Mode

- The alarmed camera picture is displayed in Single Spot mode on the spot monitor. When another alarm is received, the display switches to showing the most recent alarmed camera picture in Single Spot mode.
- The camera title and alarm display blink alternately on the monitor.

2. Alarm Ignore Mode

- The camera pictures selected before alarm was activated remain on the monitor screen.
- If the alarmed channels are displayed, the camera title and alarm display blink alternately on the monitor screen.

■ Alarm Reset

● Manual Reset

When an alarm is activated, the Alarm Indicator blinks.
The indicator keeps blinking until all alarms are cleared by pressing the **ALARM RESET** button.
The blinking or lit indicator goes off.

● Auto Reset

The alarm is automatically reset after the programmed Alarm Output Time has elapsed or the lost video signal has been recovered.
The ALARM indicator changes from blinking to steady light.
Pressing the ALARM RESET button will clear the alarm and make the indicator go off.

● External Reset

The alarm is reset by a recover signal received from the external equipment at pin 8 of the ALARM/ REMOTE Control Connector.
The ALARM indicator goes off.

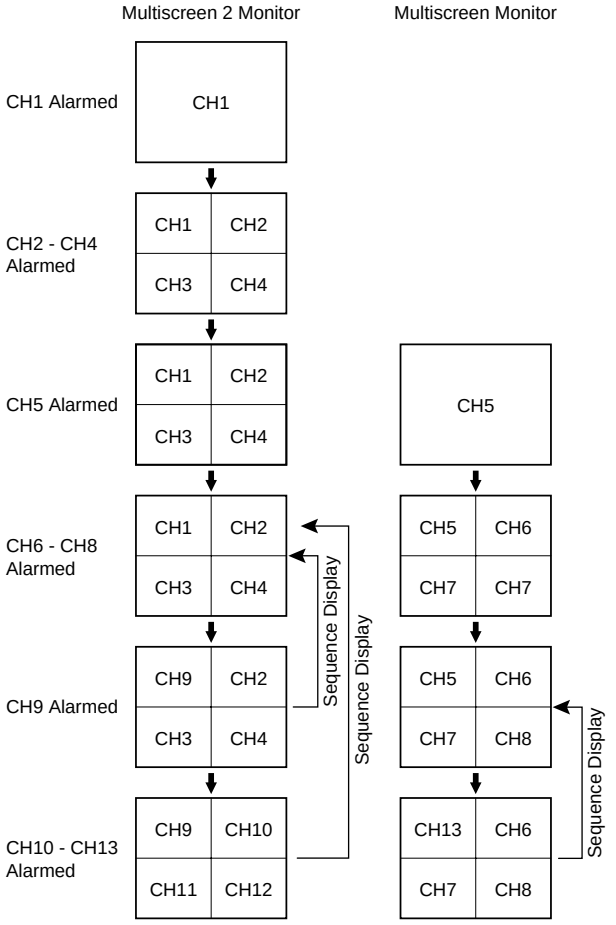
● PC Command Reset

The alarm is reset by an OAL command from a personal computer, either manually or automatically depending on the Alarm Reset parameter selected.
Refer to the command table on page 55.

In these reset functions, the reset signal is output from pin 27 of the ALARM/REMOTE Control Connector.

■ Example of Using Multiscreen 2 Monitor

The illustration below shows an example of how alarm is displayed when a Multiscreen 2 Monitor is connected to the REC OUT connector.

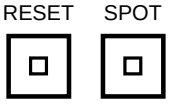


- When alarm is activated, the picture of the alarmed camera is displayed in Single Spot mode on the Multiscreen 2 Monitor.
- From the second alarm on, the pictures of the alarmed cameras are displayed in quad mode on the Multiscreen 2 Monitor in the order of upper left to lower right segment.
- The fifth alarm activated is displayed in Single Spot mode on the Multiscreen 2 Monitor, while the previous four alarms remain displayed in quad mode on the Multiscreen 2 Monitor.
- From the sixth alarm on, the pictures of the alarmed cameras are displayed in quad mode on the Multiscreen Monitor.
- From the ninth alarm on, the pictures of the alarmed cameras on the Multiscreen 2 Monitor are overwritten in the order of upper left to lower right segment.
  Then the overwritten and previous pictures are displayed alternately.
- From the thirteenth alarm on, the pictures of the alarmed cameras on the Multiscreen Monitor are overwritten in the order of upper left to lower right segment.
  Then that overwritten and previous pictures are displayed alternately.

■ Alarm Suspension

This function disables activation of the alarm link and instead enables recording of any alarm activated in the alarm log.
It is used to suspend the alarm link during camera setup.

1. Press the **RESET** and **SPOT** buttons simultaneously for more than two seconds to suspend the alarm.
   The LED on the RESET button lights up.



2. Press the **RESET** button again to reset the alarm suspension.
   The LED on the RESET button goes off.

OTHER FUNCTIONS

■ Recording on the Time Lapse VCR

The following selections are made on the SETUP MENU described previously.
Refer to the Recording Mode on page 28 for more details.

1. Check the selected recording mode (MODE 0 - MODE 9).

   MODE 0: Normal Mode (Real Time)
   MODE 1 - 9: Time Lapse Mode (Linear Mode)
   If MODE 9 is selected, check the picture (Spot or Quad) to be recorded on the VCR.
2. Press the Record button of the VCR to begin recording.
   Notes:
   - To let the VCR display the VCR menu for setup, select MODE 0 in the REC MODE SETUP menu of the Multiplexer.
   - While recording with the camera switching pulse (MODE 9), quad recording will work properly when the selected recording interval is more than 0.11 seconds (less than 9 fields/s).
   - While recording without the camera switching pulse (MODE 1 - 8), quad recording is not available.
     When using a VCR whose recording interval is 2 or 3 fields, select 4 fields (minimum) for the REC MODE parameter.
     However the same picture may be recorded repeatedly.

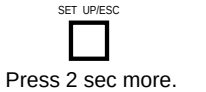
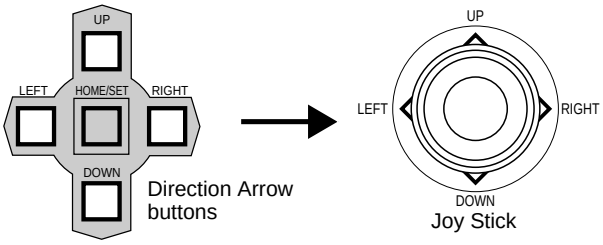
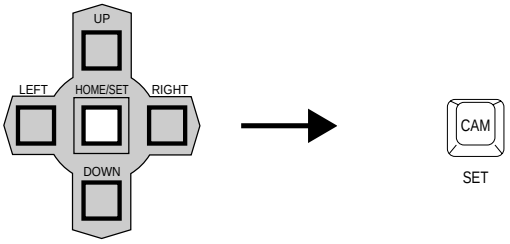
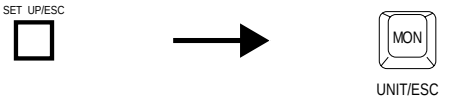
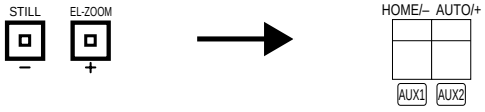
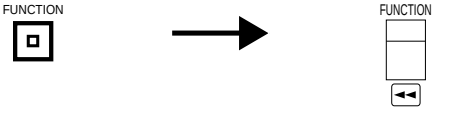
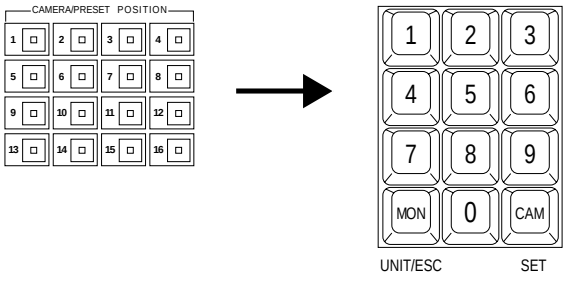
■ Camera Switching Pulse Loss Display

- When loss of the camera switching pulse is detected, “SW LOSS” will blink on the monitor screen.
- The buzzer does not beep.
- When the camera switching pulse is recovered, “SW LOSS” is cleared from the monitor.

Notes:
- When MODE 0 to MODE 8 is selected for recording, or MULTI 2 OUT for REC OUT, “SW LOSS” is not displayed because of the way the system application works.
- If “ALARM” or “CH □□ LOSS” is displayed on the monitor screen, “SW LOSS” is not displayed because alarm has priority.

SETUP MENU OPERATIONS (with WV-CU550A)

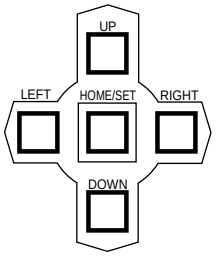
During setup of the WJ-FS616 with the WV-CU550A System Controller, the following buttons and keys of the System Controller correspond with those of the WJ-FS616 as shown below.

WJ-FS616	WV-CU550A	Function
		Display the SETUP MENU or escape from the menu.
		Move the cursor or select the mode or parameter.
		Execute the selection and display the submenu for items with the (*) mark
		Execute the selection and return to the previous menu.
		Select the mode or parameter.
		Select the next page.
		Input any numeric values.

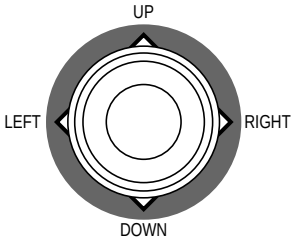
Refer to setup on page 21 to 37 for further details.

OPERATING PROCEDURES (with WV-CU550A)

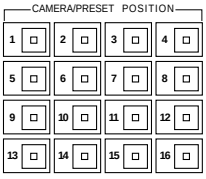
When operating the Video Multiplexer with the WV-CU550A System Controller, the following buttons and keys of the System Controller correspond with those of the Video Multiplexer.



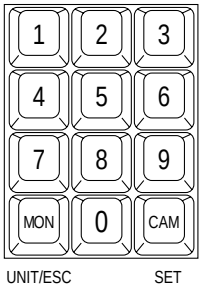
Direction Arrow Button



Joystick Controller



Camera Selection Buttons



Numeric Key + Set Key

While the **ALT** button is in ON position, control of the VCR with the buttons shown below is enabled.

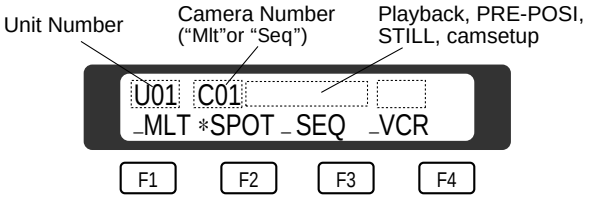
⇔/◄◄	:	Rewind	FUNCTION
▮▮	:	Pause	PRE-POSI
►►/⇔	:	Fast Forward	STILL
◄	:	Reverse Play	CAMERA SET ON ◄
■	:	Stop	EL-ZOOM
►	:	Play	CAMERA SET OFF ►
▼	:	T/L mode	▼
▲	:	T/L mode	SET UP ▲
●	:	Record	MULTISCREEN SELECT

Refer to the supplied panel templates for the other buttons.

Note: When controlling with the WV-CU550A, it is recommended to set the **LOCK** switch on the WJ-FS616 to the **ON** position to prevent false operation.

MONITOR CONTROL FUNCTION

1. Press the Controller On/Off Switch located on the rear of the System Controller to the ON position.
   The display shown below appears on the System Controller's LCD.

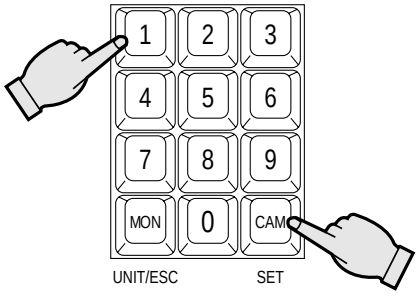


   The Function Buttons operate as shown below.

   F1: Same operation as MULTISCREEN button
   F2: Same operation as SPOT button
   F3: Same operation as SEQUENCE button
   F4: Same operation as VCR/CAM button

   _ Mode OFF
   ✳ MODE ON

2. Set the LCD display to ✳**SPOT** or ✳**MLT** by pressing the **F2** or **F1** button on the controller.
3. Select the desired camera by pressing the numeric keys, then press the **SET** key.
   The selected camera picture is displayed in Single Spot on the selected monitor screen.



Note: Proceed as described for Monitor Control Function on page 38 to 42.

CAMERA CONTROL FUNCTION

Camera control is only available while the camera picture is displayed in Single Spot on the monitor screen.

Note: When controlling the camera with multiplexed control data by connecting a coaxial cable, you should install the optional WV-PB6164 Data Multiplex Board in the Video Multiplexer.

■ Camera Selection

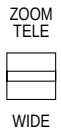
1. Set the LCD display to ✳**SPOT** or ✳**MLT** by repeatedly pressing the **F2** or **F1** button on the controller.
2. Select the camera **(VCR)** by pressing the **Function (F4)** button on the controller.
3. Select the desired camera by pressing the numeric keys, then press the **SET** key.
   The selected camera picture is displayed in Single Spot on the selected monitor screen.

■ Controlling System Accessories

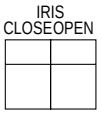
1. Lens Control

1. Select the desired camera referring to the Camera Selection above.
2. Press the **FOCUS** button to adjust the lens focus to obtain a sharply focused picture while observing the monitor.
   If you are using the specified camera with auto focus feature, you can adjust the lens focus automatically by pressing the **AF** button.

3. Press the **ZOOM** button to adjust the lens zoom to obtain the desired picture while observing the monitor.
   Press this button to the **TELE** position to optically bring an object closer. Pressing to the **WIDE** position has the reverse effect.



4. Press the **IRIS** buttons to close or open the lens iris. Adjust the lens iris by using the buttons to obtain the proper picture exposure.
   By pressing both of these buttons at the same time, the lens iris is set to the initial factory settings.



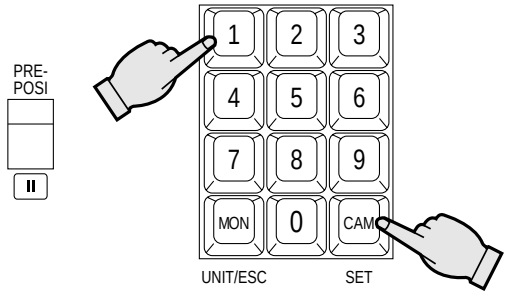
2. Pan/Tilt Control (Manual Operation)

1. Select the desired camera referring to the Camera Selection above.
2. Move the joystick to move the pan/tilt head in the desired direction.
   If the joystick is positioned in between UP and RIGHT, the pan/tilt head moves diagonally upwards and to the right.
   The moving speed of the PAN /TILT head depends on the tilt of the joystick. The more you tilt it, the faster the head moves on the combination cameras.

3. Pan/Tilt Control (Preset Operation)

The following functions are only available with cameras that have preset panning functions, such as the Panasonic WV-BS500 or WV-CS600 series.

1. Select the desired camera referring to the Camera Selection above.
2. Press the **PRE-POSI** button, then select the preset number by pressing the numeric keys.

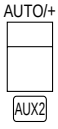


3. Press the **SET** key to move the pan/tilt head to the preset position.

4. Auto Panning

The following function is only available when the specified Pan/Tilt Head is used.

1. Select the desired camera referring to the Camera Selection above.
2. Press the **AUTO** button to activate the auto panning function.

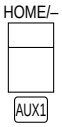


3. To cancel the auto panning function, move the joystick controller in the desired direction.
   Note: When using AUTO PANNING with combination cameras, make sure that the LOCAL/ REMOTE selection is set to LOCAL at the camera site. If REMOTE is selected, the panning movement is retained for only one minute.

5. Home Position Selection

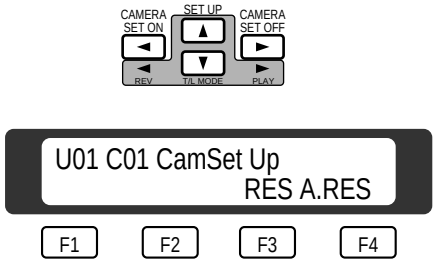
The following functions are only available with cameras that have preset panning functions, such as the Panasonic WV-BS500 or WV-CS600 series.

1. Select the desired camera referring to Camera Selection on page 50.
2. Press the **HOME** button to move the camera to the home position.



6. Camera Setup

1. Select the desired camera referring to Camera Selection on page 50.
2. Press the **CAMERA SET ON** button to access the Camera Setup Menu.
   The display on the LCD changes as shown below.



3. Select an item by moving the joystick UP or DOWN. Then select the mode by moving the joystick LEFT or RIGHT.
4. Press the **SET** key to execute the setting or enter a sub menu.
5. To return to the previous menu, press the **UNIT** key.
6. Press the **F3** button to reset the selected function, or press **F4** to reset all functions to the initial state.
7. Press the **CAMERA SET OFF** button to escape from the setup mode or menu.
   Note: Refer to the operating instructions for selected camera for more details.

   Caution: Camera addresses are important for RS-485 type cameras.
   1. Do not use addresses other than 1 through 16 for individual cameras. (“17” is not allowed.)
   2. Do not set the same address for more than one camera in an RS-485 chain.

- **Simplified preset position setting**
  The preset position can be set by a simplified procedure.
  The following functions are only available with cameras that have preset panning functions, such as the panasonic WV-BS500 or WV-CS600 series.

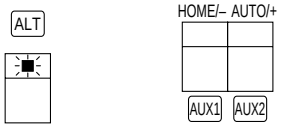
  1. Press the **ALT** button while the position setting menu is displayed.
  2. Move the joystick controller to move the pan/tilt head in the desired direction.
  3. Move the **FOCUS** or **ZOOM** button to adjust the lens to obtain the desired picture.
  4. Press the **ALT** button again to restore the joystick controller’s cursor control function.

  Caution: If the camera setup is started with the buttons on the camera, all future settings must also be made with these buttons.
  If the camera setup is started from a controller, all future settings must also be made from the controller.

7. Auxiliary Control

The following function is available only with a system that includes WV-RC100 or WV-RC150 Receivers.

1. Select the desired camera. Refer to the Camera Selection on page 50.
2. While the **ALT** switch is on, press the **AUX1** or **AUX2** button to enable or disable the user’s auxiliary switch in the Receiver.

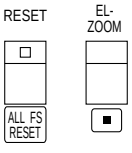


Note: The auxiliary control is not available while operating the zoom or pan/tilt head.

ALARM CONTROL FUNCTION

■ Alarm Suspension

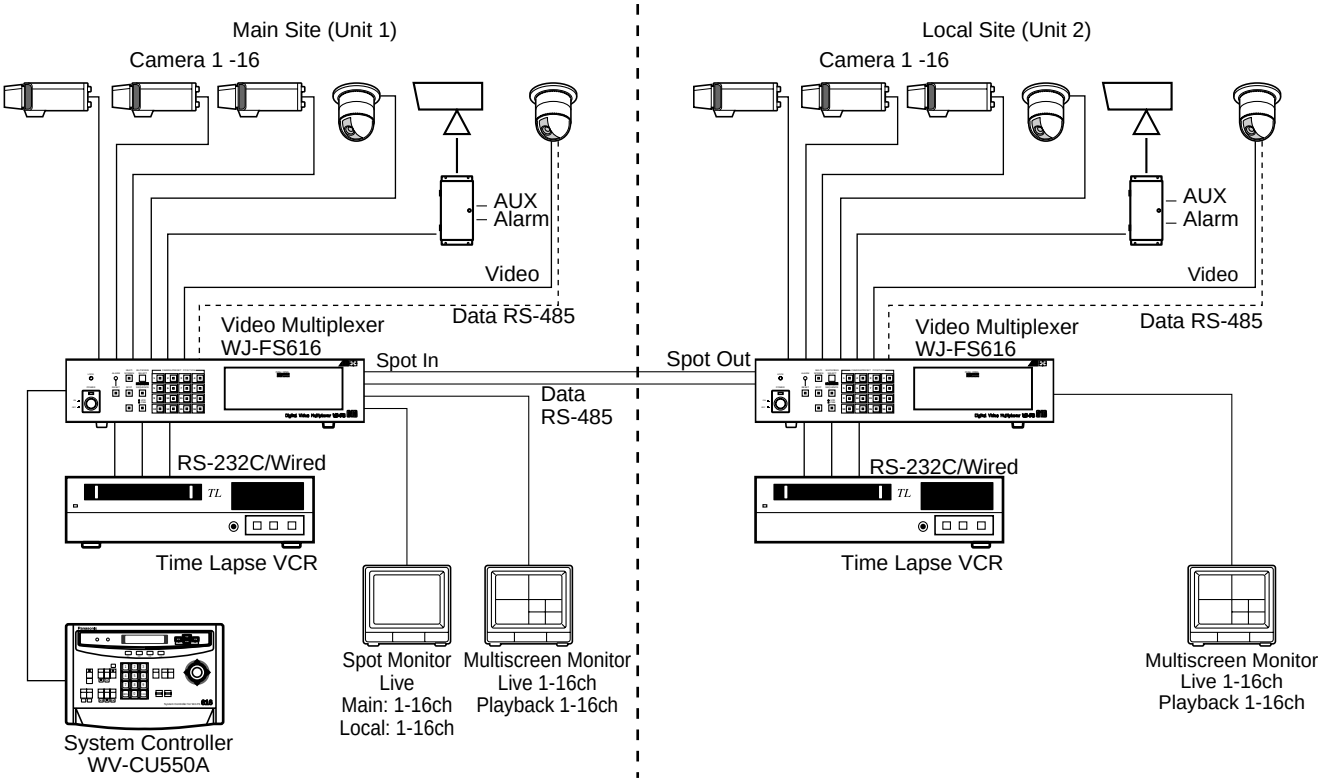
1. Press the **RESET** and **EL-ZOOM** buttons simultaneously for two seconds or longer to suspend the alarm.
   The LED on the RESET button lights up.



2. Press the **RESET** button again to reset the alarm suspension.
   The LED on the RESET button goes off.

SYSTEM EXPANSION

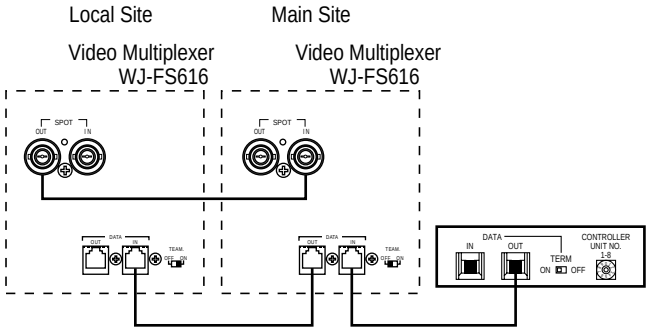
The system shown below is an example of the expansion capabilities of the WJ-FS616 Video Multiplexer. Up to four Video Multiplexers can be connected to expand the camera inputs.



32-Input System

■ Connections

In this type of installation, only one Video Multiplexer is connected directly to the System Controller by a control cable.
The rest of the Video Multiplexers are connected to the system Controller in a daisy-chain type connection.
Refer to the connections and data port settings shown below.

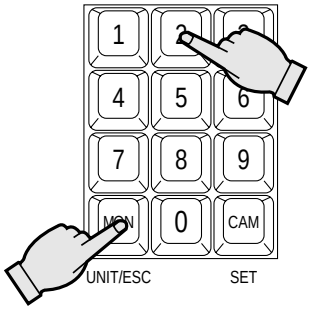


Notes:

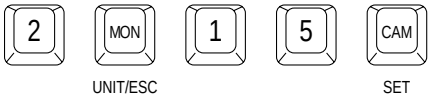
- Up to four Video Multiplexers can be daisy-chained to the System Controller.
- Unit numbers should be assigned in the order of connection, starting with the unit connected directly to the WV-CU550A System Controller.
- Sequence display is limited to the cameras connected to one multiplexer unit only.
- It is recommended to set the LOCK switch to the ON position while making these connections.
- For controlling more than 4 cameras, additional WV-BP6164 Data Multiplex Boards need to be installed in the Video Multiplexer.

■ Operating Procedures

1. Confirm that the camera and peripherals are connected correctly and firmly.
2. Turn on the power switches of all system components.
3. Confirm that the DAISY MODE parameter on the SYSTEM SETUP menu is set to ON.
4. Select the unit number of the Video Multiplexer with the Numeric Keys. Then press the **UNIT/ESC** key to activate the selected unit.



For example, press the keys shown below.



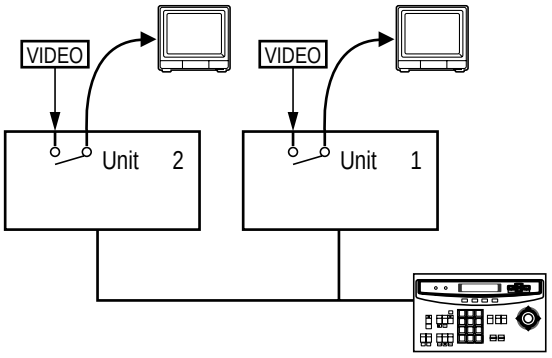
In this example, the picture of Camera No. 15 connected to Video Multiplexer Unit 2 is displayed on the Spot Monitor connected to Video Multiplexer Unit 1.

5. Operate the selected unit as described in the OPERATING PROCEDURES.
6. Select another unit with the Numeric Keys. Then press the **UNIT/ESC** key to activate the selected unit.

■ Other Applications

• Application 1

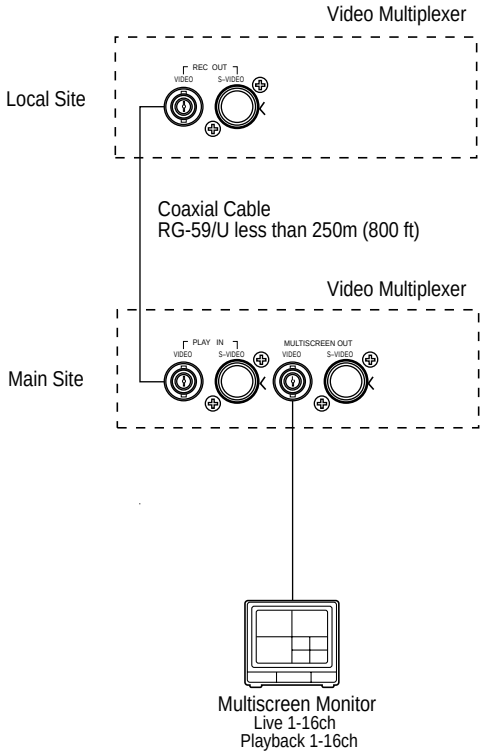
The video signal looped through the SPOT IN connector can be displayed on the Spot Monitor.



1. Confirm that the DAISY MODE on the SYSTEM SETUP menu is set to OFF.
2. Select the unit number of the Video Multiplexer with the Numeric Keys. Then press the **UNIT/ESC** key to activate the selected unit.
3. Press the **(F2)** button on the controller to select the spot monitor.
4. Press [0] then press the **SET** key to display the video on the Spot Monitor looped through the SPOT IN connector.

- **Application 2**

  The camera pictures in the Local Site can be displayed on the Multiscreen Monitor in the Main Site by connecting a coaxial cable shown below.



Local Site

Confirm that the REC MODE SETUP on the REC OUTPUT SETUP menu (page 28) is set to MODE 0.
If another mode is set for the REC MODE SETUP, this application does not work properly.

Main Site

To display the camera pictures in the Local Site, operate the video multiplexer as displaying the playback picture.
However same functions are enabled displaying the playback picture.

APPENDIX

This Appendix details the elements for communication between the Video Multiplexer and the personal computer. For BAUD RATE, DATA BIT, STOP BIT and PARITY settings, see page 35 COM PORT SETUP menu.

● Communication Protocol

1. Transmission Command

The PC sends messages to operate the Multiplexer in the format shown below. Also refer to the command table shown later.

Code	[STX] [Address] [;] [Transmission Command] [ETX]
ASCII	(02H) ( ) – – – – – – – – – – – – – – – – – ( ) (03H)

A transmission message consists of [STX], [Address], [;], [Transmission Command], and [ETX]. [Address] is expressed as “ADuu,”where ‘uu’ is in the range of “00” through “16” in decimal form to identify the unit number of the Video Multiplexer. When using the RS-232C port to communicate with the PC, [Address] and [;] can be omitted.

2. Response Command

The Multiplexer returns messages in reply to the PC’s messages with the following formats.

(1) Reception completed

When the reception was completed successfully, the Multiplexer sends back “ACK code, 06H”, followed by parameters. The response command is shown in the Command Table.

Code	[STX] [Address] [;] [Response Command] [ETX]
ASCII	(02H) ( ) – – – – – – – – – – – – – – – – ( ) (03H)

(2) Reception error

The Multiplexer sends back “NAK code, 15H”, followed by the parameters shown below. The Multiplexer then resets the reception buffer and enters waiting mode for the next message. Parameter “e” identifies the error status.

Code	[NAK] [e]
ASCII	(15H)

“e” value
1: Parity error
2: Data Over error
3: Framing error
4: Overrun error
5: Time Out error

(3) Parameter error

The Multiplexer returns “ACK code, 06H”, the transmission command that was not processed properly for some reason, followed by an error code as shown below.

Code	[STX] [Transmission Command] [:] [Error Code] [ETX]
ASCII	(02H) ( ) – – – – – – ( ) (3AH) ( ) – – – ( ) (03H)

Error code
ER001: Command invalid
ER002: Parameter invalid
ER301: Command legal but out of range
ER302: Parameter legal but out of range

Note: The Video Multiplexer returns [ACK] or [NAK] to the PC within 20 ms after the reception of [ETX] in a transmission message.

● Command Table

(1) Operation Control

Item	Transmission Command (ASCII)	Response Command (ASCII)	Parameter (ASCII)
Monitor Select	OMS : m	OMS	m=0 Spot Monitor m=1 Multiscreen Monitor m=2 Multiscreen 2 Monitor
VCR/Camera Select	OVC : m	OVC	m=0 Camera Mode m=1 VCR Mode
Still ON/OFF	OST : m : nn	OST	m=0 Still OFF m=1 Still ON nn=00 All video channels specify nn=01 - 16 Camera Number
Multiscreen Select	OTC : m	OTC	m=0 Quad m=1 7 divide m=2 9 divide m=3 10 divide m=4 13 divide m=5 16 divide m=I No. of divisions (+) m=D No. of divisions (–)
Sequence	OSQ : m	OSQ	m=0 End Sequence m=1 Activate Sequence
Sequence Mode Select	OSE : m	OSE	m=0 SEQ1 m=1 SEQ2 m=2 SEQ3
Electronic Zoom ON/OFF	OZM : m	OZM	m=0 Zoom OFF m=1 Zoom ON
Single Spot CH Select	OCS : mm	OCS	mm=00 - 16 Camera Number *00=Spot Input
Camera & Playback Display Playback CH Select	OVS : mm	OVS	mm=01 - 16 Playback CH number
Alarm Input	OAI : m	OAI	m=0 1CH Alarm : m=F 16CH Alarm
Alarm Reset	OAL : m	OAL	m=0 Manual Reset m=1 Auto Reset
Alarm Log Clear	OAR	OAR	None

Note: If a command has no parameter value, it is processed with the value under lined in the table.

(2) Mode Change

Item	Transmission Command (ASCII)	Response Command (ASCII)	Parameter (ASCII)
Alarm Suspension	MAD : m	MAD	m=0 Alarm Suspension OFF m=1 Alarm Suspension ON
Lock *1	MKL : m	MKL	m=0 Lock OFF m=1 Lock ON
Setup	MSU : m	MSU	m=0 End Setup m=1 Begin Setup

*1: The LOCK (key lock) command is used to prohibit operations on the panel of the Video Multiplexers and the System Controllers. After execution of this command, only the personal computer can operate the system.

(3) Cursor Control

Item	Transmission Command (ASCII)	Response Command (ASCII)	Parameter (ASCII)
Cursor Movement Select Parameter	DCR : mm	DCR	mm=UU Move Upward mm=DD Move Downward mm=RR Move to Right mm=LL Move to Left mm=BB Move to lower layer mm=ES Move to upper layer Item decision (partial) mm=IC Select parameter (+) mm=DC Select parameter (–) mm=FF Select page mm=UR Move to Upper-Right mm=UL Move to Upper-Left mm=DR Move to Lower-Right mm=DL Move to Lower-Left *2

*2 The parameter valid on the main unit setup menu is:
mm=UU, DD, RR, LL, BB, ES, FF, IC, DC
The parameter valid for zoom position move during electronic zooming is:
mm=UU, DD, RR, LL, UR, UL, DR, DL

(4) Status Inquiry

Item	Transmission Command (ASCII)	Response Command (ASCII)	Parameter (ASCII)
Status Inquiry	QOP	Table below (19 kinds)	None

Examples of response

No.	Response Command (ASCII)	Main Unit Information
1	@mPLSNcc	Single Spot (Camera)
2	@mPLSZcc	Single Spot + Electronic Zoom (Camera)
3	@mPLSScc	Single Spot + Still (Camera)
4	@mPLSXcc	Single Spot + Zoom + Still (Camera)
5	@mPLSMLa	Multi Spot (+ Still) (Camera)
6	@mPLQNcc	Spot Sequence (Camera)
7	@mPLQMLa	Multi Sequence (Camera)
8	@mPLQZcc	Spot Sequence + Zoom (Camera)
9	@mPVSNcc	Single Spot (VCR)
10	@mPVSZcc	Single Spot + Zoom (VCR)
11	@mPVSScc	Single Spot + Still (VCR)
12	@mPVSXcc	Single Spot + Zoom + Still (VCR)
13	@mPVSMLa	Multi Spot (+ Still) (VCR)
14	@mPVQNcc	Spot Sequence (VCR)
15	@mPVQMLa	Multi Sequence (VCR)
16	@mPVQZcc	Spot Sequence + Zoom (VCR)
17	@mPRSMLa	Live & VCR Display (+ Still)
18	@mPE	Setup Mode
19	@mPX	Playback through

m=0, 1, 2 Monitor Number (0 : Spot Monitor, 1 : Multiscreen Monitor, 2 : Multiscrren 2 Monitor)
P=N, A, D, F N : Normal A : Alarm D : Normal + Alarm Suspension F : Alarm + Alarm Suspension
cc=01 - 16 Camera Number (00 (SPOT IN) is also possible when Spot Monitor (m=0)) is selected
a = 0 - 6 According to the number of screen divisions.
0 : Quad 1 : 7 divide 2 : 9 divide 3 : 10 divide 4 : 13 divide 5 : 16 divide 6 : Single Spot

SPECIFICATIONS

Power Source:	120 V AC 60 Hz
Power Consumption:	50 W
Camera Input (1-16):	1.0 V[p-p] /75 Ω composite video signal 0.5 V[p-p] /75 Ω data signal and 2.5 V[p-p] /75 Ω vertical timing pulse multiplexed.
Camera Output (1-16):	1.0 V[p-p] /75 Ω composite video signal
Spot Output:	1.0 V[p-p] /75 Ω composite video signal
Multiscreen Output:	1.0 V[p-p] /75 Ω composite video signal Y Signal; 0.714 V[p-p], C Signal; 0.286 V[p-p] /75Ω S-video signal
Recording Output:	1.0 V[p-p] /75 Ω composite video signal Y Signal; 0.714 V[p-p], C Signal; 0.286 V[p-p] /75Ω S-video signal
Playback Input:	1.0 V[p-p] /75 Ω composite video signal Y Signal; 0.714 V[p-p], C Signal; 0.286 V[p-p] /75Ω S-video signal
Alarm/Remote Control:	37-pin D-sub Connector
VCR Control (RS-232C):	25-pin D-sub Connector
VCR Control (Wired):	Mini-jack ϕ2.5 mm
Ambient Operating Temperature:	–10°C - +50°C (14°F - 122°F)
Ambient Operating Humidity:	Less than 90 %
Dimensions:	420 (W) X 88 (H) X 350 (D) mm [16-9/16” (W) X 3-7/16” (H) X 13-3/4” (D)]
Weight:	6.5 kg (14.3 lbs.)

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

STANDARD ACCESSORIES

Rack Mounting Bracket ..... 2 pcs.
Screws (M4 x 10) ..... 4 pcs.
Switch Protector ..... 1 pc.

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