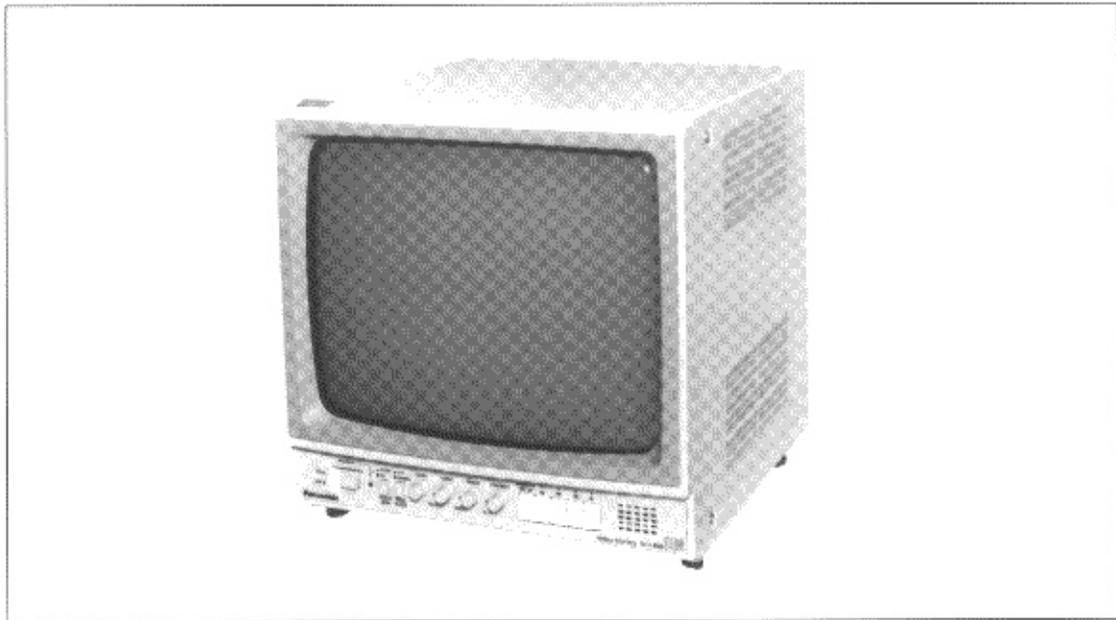


Operating Instructions

Video Monitor
WV-BM140



Panasonic®

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

CONTENTS

PREFACE	1
FEATURES	1
PRECAUTIONS	1
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS	2
SETUP OPERATION	5
OPERATING PROCEDURES	6
CONNECTIONS	10
SYSTEM CONNECTION	14
SPECIFICATIONS	15
OPTIONAL ACCESSORIES	15



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



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.

-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 rear 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. _____

Serial No. _____

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

PREFACE

The Panasonic's WV-BM140 is a desk-top closed circuit Video Monitor especially designed for surveillance.

Up to four specified cameras can be connected to this monitor for surveillance by sequential or manual switching between cameras. Monitor and cameras form a simple sys-

tem, interconnected by coaxial cables that carry DC power and vertical drive pulse to the cameras. The system can be expanded to a CCTV system by adding an intercom and sensors.

FEATURES

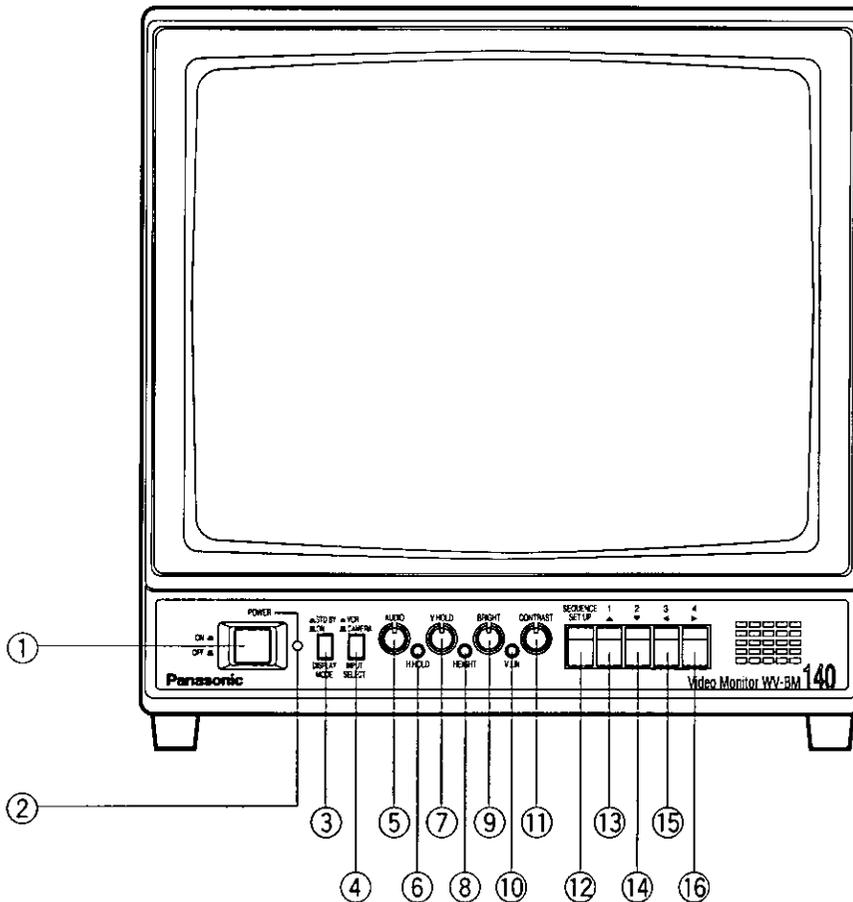
- Up to four specified cameras can be connected to this monitor with an alarm feature. This number can be increased to 7 specified cameras by using the camera extension unit WV-AD110A.
- The monitor has a 14" diagonal screen (13" diagonal actual visual size).
- The sequential switching interval is selectable between 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, or 30 seconds.
- Stand-by (STD BY) mode is available for sequential switching without a picture on the monitor.
- Alarm period is selectable between 1, 5, 10, 20, 30, 40, 50, or 60 seconds.
- Alarm control output is supplied for a buzzer or chime.
- Automatic Reset Function is linked to spot monitor control input. An automatic reset time can be set to 1-60 seconds.
- A CCTV camera with microphone can be connected to this monitor.
- Automatic bypass circuit works to skip channels to which no camera is connected.
- The following functions are available from the setup menu:
 - Camera Identification Display (CAMERA ID)
 - Audio Selection (AUDIO SELECT)
 - Timing Selection (TIMING SELECT)
 - Sequential Time Adjustment (SEQ TIME ADJ)
 - Alarm Buzzer Setting (ALARM BUZZER)
 - Alarm Time Adjustment (ALARM TIME ADJ)
 - Automatic Resetting (AUTO RESET)
 - Manual Skipping (MANUAL SKIP)

PRECAUTIONS

- Do not block the ventilation slots. Place the monitor at least 5 cm (2 inches) apart from the wall.
- Do not expose the monitor to water or moisture. Do not operate the monitor if it becomes wet. Turn the power off immediately and ask a qualified service person for servicing. Moisture can damage the monitor and also create the danger of electric shock.
- Do not attempt to disassemble the monitor. To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Ask a qualified service person for serving.
- Use the monitor under conditions where temperature is from -10°C - $+ 50^{\circ}\text{C}$ (14°F - 122°F), and humidity is below 90%.
The input power resource is 120V AC 60 Hz.
Do not operate the monitor under extreme ambient conditions beyond the specified temperature, humidity, or power resource ratings.
- This model is not designed for rack mounting.
- Do not stack two or more sets. If more than two monitors are used, place them at least 15 cm (6 inches) apart. Otherwise the monitor may produce noise in the display.
- Do not use the monitor in a car or other places where it may be exposed to severe vibration.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

■ FRONT VIEW



1. Power Switch (POWER)

This switch turns the power of the monitor on or off. Press this switch once. (☐) to turn the monitor on. Press it again (■) to turn the monitor off.

2. Power Indicator

This indicator lights up to indicate that the power is on.

3. Display Mode Switch (STD BY ☐/ON ■)

ON: The camera picture will appear on the monitor.

STD BY: The camera picture will not appear on the monitor in the sequence mode, but is supplied to the REC OUT connector.

4. Input Select Switch (VCR ☐/CAMERA ■)

VCR: The VCR playback picture or video that is connected to the PLAY IN connector can be observed.

CAMERA: The picture of the camera that is connected to the CAMERA INPUT connector can be observed.

5. Audio Control (AUDIO)

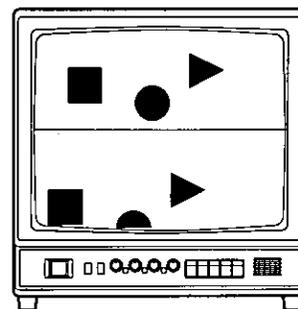
Turn this control clockwise to increase the audio level. Turn it counterclockwise to decrease the audio level.

6. Horizontal Hold Control (H.HOLD)

This control is used to adjust the horizontal position of the picture.

7. Vertical Hold Control (V. HOLD)

This control is used to adjust the vertical position of the picture.



8. Height Control (HEIGHT)

Turn this control clockwise to extend the picture vertically. Turn it counterclockwise to shrink the picture vertically.

9. Bright Control (BRIGHT)

Turn this control clockwise to increase the picture brightness. Turn it counterclockwise to decrease the picture brightness.

10. Vertical Linearity Control (V.LIN)

This control is used to correct vertical nonlinearities in the picture.

11. Contrast Control (CONTRAST)

Turn this control clockwise to increase the contrast of the picture. Turn it counterclockwise to decrease the contrast of the picture.

12. Sequence / Setup Switch (SEQUENCE / SET UP)

This switch is used to display a series of camera pictures on the monitor. Each time this switch is pressed switches to the next camera picture. if you press and hold down this switch for 2 seconds or longer with the INPUT SELECT switch in CAMERA position, the SET UP MENU appears on the monitor.

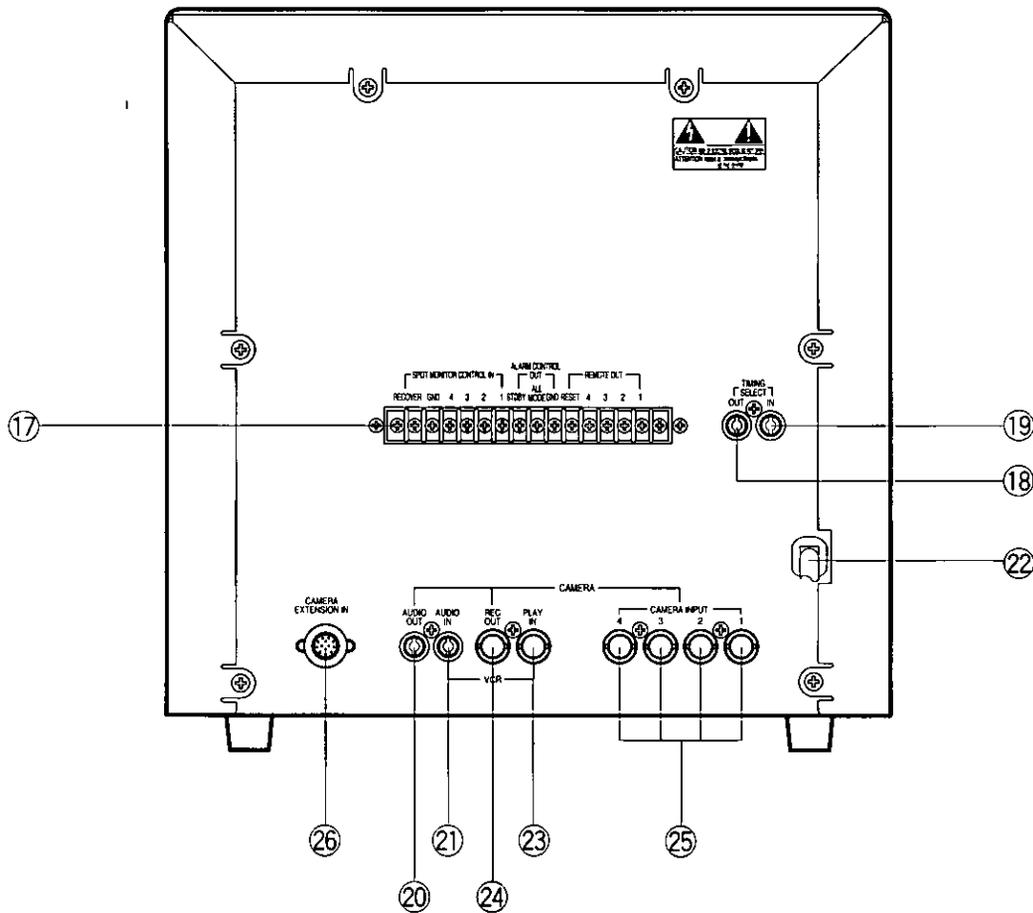
13. Camera Selection Switch (1) / Up Switch (▲)

14. Camera Selection Switch (2) / Down Switch (▼)

15. Camera Selection Switch (3) / Left Switch (◀)

16. Camera Selection Switch (4) / Right Switch (▶)

■ REAR VIEW



17. External Control Connection Terminals RECOVER

This terminal is used to reset the spot camera picture and return to the sequential operation by receiving the recover signal from the time lapse VCR.

SPOT MONITOR CONTROL IN (1-4)

These terminals are used to receive the alarm control signal from the intercom or alarm sensor.

Note: The short-circuit voltage across these terminals should be 0 - 0.2 volt when the intercom or alarm sensor is activated.

ALARM CONTROL OUT

These terminals are used to supply the alarm control signal to external equipment such as the Time Lapse VCR or buzzer. When an intercom or alarm sensor is connected to the spot monitor control terminal, the alarm output signal is supplied from the STD BY or ALL MODE terminal to the time lapse VCR or buzzer.

STD BY-GND Connection

The alarm output signal is supplied only when the DISPLAY MODE switch is set to STD BY.

ALL MODE-GND Connection

The alarm output signal is supplied regardless of the display mode.

REMOTE OUT

These terminals supply the remote control output signal or recover output signal when the camera is selected manually or automatically, or by using external control.

18. Timing Select Output Connector (TIMING SELECT, OUT)

This connector supplies the timing pulse signals for switching in the sequence operation of other extensible systems, such as another CCTV system or sequential switcher. This connector sends the signal that is supplied to the TIMING SELECT IN connector.

19. Timing Select Input Connector (TIMING SELECT, IN)

This connector receives the external timing pulse for the sequential operation from the time lapse VCR or another CCTV system.

20. Audio Output Connector (AUDIO OUT)

This connector supplies the audio recorded with the picture to the time lapse VCR, if the specified camera with microphone is connected to the CAMERA INPUT connector.

21. Audio Input Connector (AUDIO IN)

This connector receives the audio signal from an external source.
While the INPUT SELECT switch is set to VCR, the audio from the external source that is connected to this connector can be monitored through the internal speaker.

22. Power Cord

Caution: 120V AC supply only.

23. Playback Input Connector (PLAY IN)

This connector receives the video signal from an external source such as a VCR for monitoring.
While the INPUT SELECT switch is set to VCR, the video from the external source that is connected to this connector is displayed on the monitor.

24. Record Output Connector (REC OUT)

This connector supplies the video signal of the cameras to an additional monitor or VCR.
The video signal of the camera is supplied to this connector even if the DISPLAY MODE switch is set to STD BY.

25. Camera Input Connectors (CAMERA INPUT, 1/2/3/4)

Connect the specified cameras to these connectors. These connectors supply DC power and vertical drive pulse to the cameras and receive the video and audio signal from the cameras.

Notes:

- Be sure to connect only the specified camera.
- Connect cameras after making sure that the power of the monitor is off.

Connecting the camera with the power of the monitor turned on will activate the connection error protection circuit, so the camera will not work.

26. Camera Extension Input Connector (CAMERA EXTENSION IN)

This is a 12-pin connector for the Camera Extension unit used to connect 3 additional cameras.

The pin assignment is shown below.

- Pin 1 : Logic Signal for Sequential Control
- Pin 2 : Logic Signal for Sequential Control
- Pin 3 : Logic Signal for Sequential Control
- Pin 4 : Video Input Signal
- Pin 5 : Ground
- Pin 6 : Logic Signal for Sequential Control
- Pin 7 : Logic Signal for Sequential Control
- Pin 8 : Logic Signal for Sequential Control
- Pin 9 : Logic Signal for Sequential Control
- Pin 10 : Logic Signal for Sequential Control
- Pin 11 : Vertical Drive Output Signal
- Pin 12 : Not used

SET UP OPERATION

Make sure that the connections of peripherals and those made at the alarm output terminals are correct and firm. The SET UP MENU is not displayed unless a camera is connected. (Refer to "CONNECTIONS" on page 12.)

The SET UP MENU is described in detail in the following section "Setting Procedure".

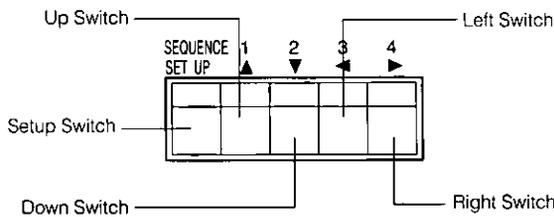
Set the DISPLAY MODE switch to ON to display the SET UP MENU.

Set the INPUT SELECT switch to CAMERA to display the SET UP MENU. If set to VCR, the SET UP MENU is not displayed.

When you want to display the SET UP MENU, make sure the followings:

- The position of the DISPLAY MODE switch is ON.
- The position of the INPUT SELECT switch is CAMERA.

Setup operations are performed by the following switches on the front panel.



- Up Switch : The cursor moves upwards.
 Down Switch : The cursor moves downwards.
 Right Switch : The cursor moves to the right. This switch selects the mode and can be used to adjust some levels.
 Left Switch : The cursor moves to the left. This switch selects the mode and can be used to adjust some levels.
 Setup Switch : The menu is selected by this switch and determine the selection..

• All Reset Operation

All Reset allows you to reset all setup menu items to the factory settings if you are unsure about the correct settings. Proceed as follows:

- (1) Make sure that the DISPLAY MODE switch is set to ON and the INPUT SELECT switch to CAMERA, and that the SET UP MENU is not displayed.
- (2) Turn off the power of the monitor.
- (3) Turn on the power of the monitor while pressing the SET UP switch and the Right switch (▶) simultaneously.

All adjustments and selections are reset to the factory settings.

• Opening the Setup Menu

```

** SET UP MENU **
CAMERA ID          1 2 3 4
                    1 CAMERA
AUDIO SELECT       SEQ
TIMING SELECT      INT
SEQ TIME ADJ       1 SEC
ALARM BUZZER       ON
ALARM TIME ADJ     60 SEC
AUTO RESET         ON
MANUAL SKIP        1 2 3 4
END                SET UP DISABLE
    
```

Blinking

Press and hold down the SET UP switch for 2 seconds or more.

The SET UP MENU is displayed on the monitor as shown above.

By observing this menu, you can check the present settings. Check the current settings on the menu.

Refer to the sections below for a detailed description of menu items. If you decide not to make any changes after checking the current settings, move the cursor to END at the start of the bottom line, and press the SET UP switch to return to normal camera picture mode.

• Editing the Set Up menu

To edit the SET UP MENU (change settings), use the Up/Down switches (▲/▼) and Right/Left switches (▶/◀) to move the cursor to SET UP DISABLE in the bottom line. Press the SET UP switch. "SET UP ENABLE" will be displayed.

Move the cursor to the item(s) you want to change until you reach END.

Important Notices:

- When "SET UP DISABLE" is displayed in the bottom line of the SET UP MENU, you can not enter actual mode setting. This is to prevent setting of the wrong mode.
- When the cursor is moved to END and the SET UP MENU closed after changing settings (ex. ON-OFF), the new values are stored in the (Electric Erasable) memory and Programmable Read Only Memory (EEPROM). These values remain valid until new values are stored, even if the power of the monitor is off.

Setting Procedure

1. Camera Identification Setting (CAMERA ID)

This item has two functions.

In the upper line, you can set whether to have the camera ID displayed or not.

ON: The camera number (1, 2, 3 or 4) indicates that the picture is displayed with the camera ID.

OFF: The "*" mark indicates that the picture is displayed without the camera ID.

The lower line is used to edit the camera ID.

```

** SET UP MENU **

CAMERA ID      [1] 2 3 4
AUDIO SELECT   1 CAMERA
TIMING SELECT  SEQ
SEQ TIME ADJ   1 SEC
ALARM BUZZER   ON
ALARM TIME ADJ 60 SEC
AUTO RESET     ON
MANUAL SKIP    1 2 3 4
END            SET UP ENABLE
    
```

Press the Down Switch (▼).

```

** SET UP MENU **

CAMERA ID      1 2 3 4
AUDIO SELECT   [1] CAMERA
TIMING SELECT  SEQ
SEQ TIME ADJ   1 SEC
ALARM BUZZER   ON
ALARM TIME ADJ 60 SEC
AUTO RESET     ON
MANUAL SKIP    1 2 3 4
END            SET UP ENABLE
    
```

Press the SET UP Switch.

```

** SET UP MENU **

CAMERA ID      1 2 3 4
AUDIO SELECT   1 CAMERA
TIMING SELECT  SEQ
SEQ TIME ADJ   1 SEC
ALARM BUZZER   ON
ALARM TIME ADJ 60 SEC
AUTO RESET     ON
MANUAL SKIP    1 2 3 4
END            SET UP ENABLE
    
```

After completing the selection, press the SET UP Switch.

```

** SET UP MENU **

CAMERA ID      1 2 3 4
AUDIO SELECT   [1] CAMERA
TIMING SELECT  SEQ
SEQ TIME ADJ   1 SEC
ALARM BUZZER   ON
ALARM TIME ADJ 60 SEC
AUTO RESET     ON
MANUAL SKIP    1 2 3 4
END            SET UP ENABLE
    
```

1-1. Move the cursor to CAMERA ID and select the desired camera by using the Left (◀) or Right (▶) switch.

To display the camera identification, press the SET UP switch repeatedly.

1-2. After completing step 1-1, move the cursor to the second line by using the Down (▼) switch.

Press the SET UP switch and set the camera identification as in 1-3 below.

1-3. Select the camera identification from the characters shown below.

← (▲)	(▼) →
0 1 2 3 4 5 6 7 8 9 ; : A B C D E F G H I J K L M N	
O P Q R S T U V W X Y Z * # ' ()	
* + , - . / ← = → · (space)	

Use the Up/Down switches (▲/▼) to select characters. To correct the character that is edited wrongly, press the Left/Right switches (◀/▶) to select the character to be corrected and press the Up/Down switches (▲/▼) to select a new character.

1-4 To register the camera identification, move the cursor back to CAMERA ID.

Note: The Camera Identification setting is not memorized unless CAMERA ID is selected again.

2. Audio Selection (AUDIO SELECT)

This item is used to select the audio source.

1-4: You can monitor the audio from the channel you selected by pressing the camera selection button.

SEQ: You can monitor the audio that is switched with the picture by sequential switching.

```

** SET UP MENU **

CAMERA ID      1 2 3 4
AUDIO SELECT   1 CAMERA
TIMING SELECT  [SEQ]
SEQ TIME ADJ   1 SEC
ALARM BUZZER   ON
ALARM TIME ADJ 60 SEC
AUTO RESET     ON
MANUAL SKIP    1 2 3 4
END            SET UP ENABLE
    
```

2-1. Move the cursor to "AUDIO SELECT".

Select Sequential (SEQ) or Fixed (1,2,3 or 4) by using the Left (◀) or Right (▶) switch.

2-2. When set to "SEQ", the audio signal is switched with the channel.

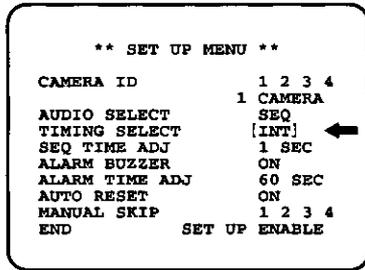
2-3. When set to "1, 2, 3, 4", the audio signal is fixed to the selected channel.

3. Timing Selection (TIMING SELECT)

This item is used to select the switching timing.

INT: The switching timing is determined by the setting of SEQ TIME ADJ.

EXT: The switching timing is determined by another CCTV system or the time lapse VCR.



3-1. Move the cursor to TIMING SELECT.

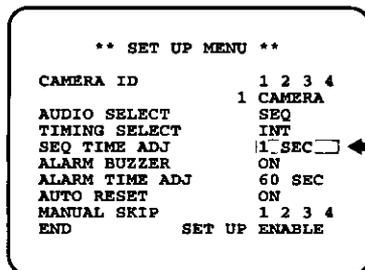
3-2. Select Internal Timing (INT) or External Timing (EXT) by using the Left (◀) or Right (▶) switch.

Note: Set this item to EXT when the timing signal is input from another video monitor or time lapse VCR.

4. Sequential Time Adjustment (SEQ TIME ADJ)

This item is used to select the switching timing when you selected INT for TIMING SELECT.

You can select the sequential time from 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, or 30 seconds.



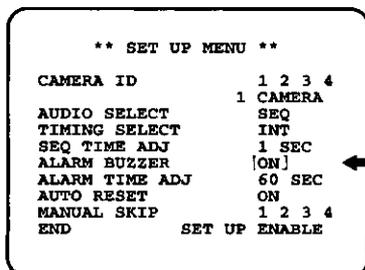
4-1. Move the cursor to SEQ TIME ADJ.

4-2. Select sequential time by using the Left (◀) or Right (▶) switch.

Sequential time can be selected from (approx.) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25 or 30 seconds.

5. Alarm Buzzer On/Off (ALARM BUZZER)

This item is used to turn the alarm buzzer function on or off.



5-1. Move the cursor to ALARM BUZZER.

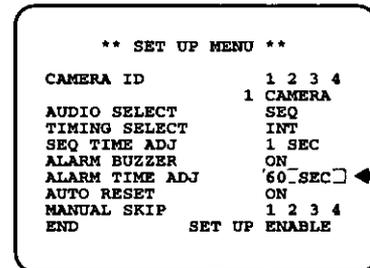
5-2. ALARM BUZZER On/Off can be selected by using the Left (◀) or Right (▶) switch.

The alarm sounds for 1-60 seconds (selected by ALARM TIME ADJ) when an alarm signal is received.

6. Alarm Time Adjustment (ALARM TIME ADJ)

This item is used to select the duration of the alarm buzzer sound.

You can select the duration of the alarm buzzer sound.



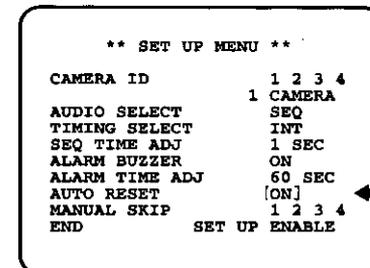
6-1. Move the cursor to ALARM TIME ADJ.

6-2. Set the duration of the alarm buzzer by using the Left (◀) or Right (▶) switch.

Alarm buzzer can be selected from (approx.) 1, 5, 10, 20, 30, 40, 50 or 60 seconds.

7. Auto Reset Setting (AUTO RESET)

This item is used to turn the automatic resetting function on or off.



7-1. Move the cursor to AUTO RESET.

7-2. Turn the automatic resetting function on or off by using the Left (◀) or Right (▶) switch.

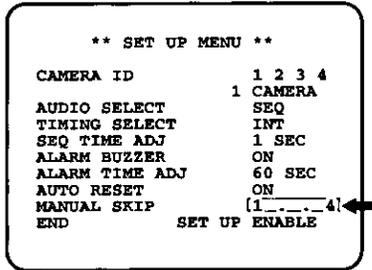
When ON is selected for AUTO RESET, the alarm mode will be reset automatically 60 seconds after the sensor signal is received.

8. Manual Skip Setting (MANUAL SKIP)

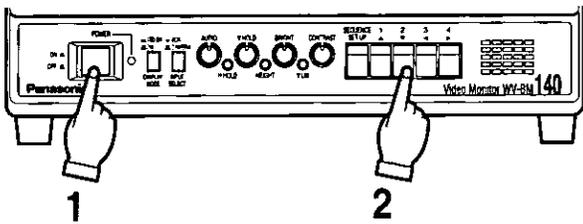
This item is used to skip the picture of a specified camera for monitoring in sequential switching.

- 8-1. Move the cursor to MANUAL SKIP.
- 8-2. Select the camera number that you want to skip by using the Right (◀) or Left (▶) switch. This setting works only for the channels that are connected with cameras.
- 8-3. Press the SET UP switch. The "•" mark appears. The selected camera picture is skipped.

Note: To cancel to skip the camera picture, select the "•" mark and press the SET UP switch again. The camera number appears.



OPERATING PROCEDURES



Selection of Camera

1. Press the POWER switch on the front panel once to turn the power ON.
2. Press the desired Camera Selection switch.

Notes :

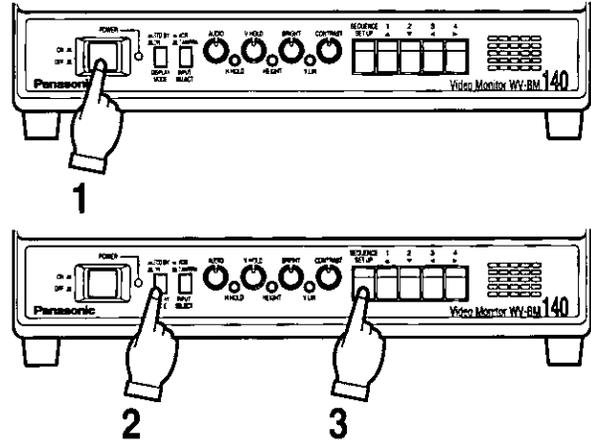
1. It takes a few seconds after turning on the power of the monitor until a normal picture is displayed.
2. When turned on, the monitor is automatically in sequence mode.
3. The picture of the desired camera can be displayed on the monitor by pressing the corresponding Camera Selection switch, even if the monitor is in sequence mode.
4. The picture of the desired camera can be displayed on the monitor by pressing the corresponding camera selection switch, even if the monitor is in STD BY mode.

Caution :

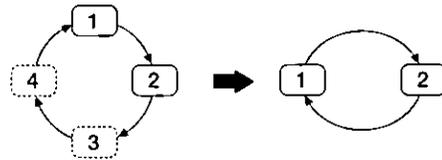
When the power of the monitor is turned on and off repeatedly in a short period of time, the camera may not be turned on due to operation of the misconnection protection circuit.

In this case, keep the POWER switch in the OFF position for a few seconds before turning it on again.

Sequence Mode (more than two cameras)

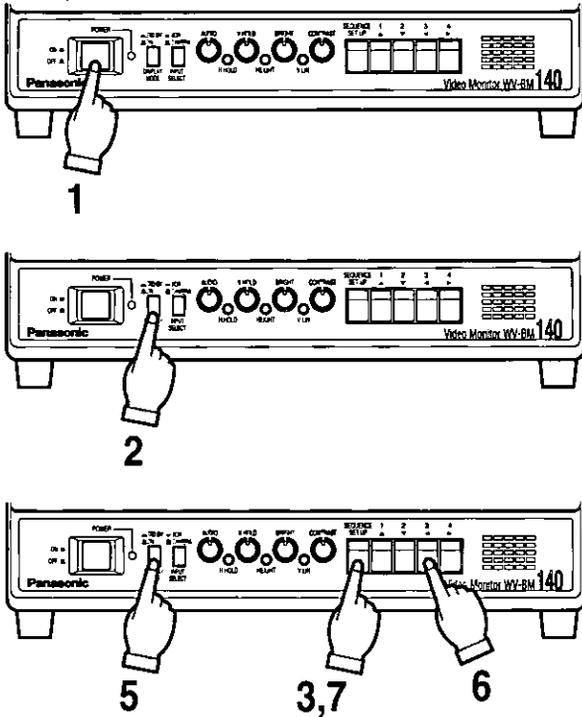


1. Press the POWER switch once to turn the power ON.
2. Set the DISPLAY MODE switch to ON.
3. Press the SEQUENCE / SET UP switch for 2 seconds or longer.
4. Set the desired sequential time from the SET UP menu.



Note: Sequential switching features an automatic bypass circuit that detects the presence of DC power for a camera, thereby automatically skipping an input connector that has no camera connected.

Standby(STD BY) Mode Monitoring Picture (Usually no picture displayed)



1. Press the POWER switch once to turn the power ON.
2. Set the DISPLAY MODE switch to ON.
3. Press the SEQUENTIAL / SETUP switch for 2 seconds or longer.
4. Set the sequential time from the SET UP MENU.
5. Set the DISPLAY MODE switch to STD BY.
The picture on the monitor disappears. However, sequential switching is carried out and the picture can be observed on an additional monitor connected to the REC OUT connector of this monitor.
6. When you want to monitor a specific camera picture, press the corresponding Camera Selection switch.
7. By pressing the SEQUENCE / SET UP switch again, the picture on the monitor disappears and the mode returns to sequential switching in STD BY.

VCR Playback Mode

1. Press the POWER switch once (➤) to turn on the monitor and the cameras.
2. Set the DISPLAY MODE switch to ON.
3. Set the INPUT SELECT switch to VCR for observing the playback picture.

Automatic Reset function for Spot Monitor Mode

This monitor has a built-in automatic reset circuit. When AUTO RESET on the SET UP MENU is set to ON, the spot monitoring mode is automatically reset to the sequential switching mode about 60 seconds after the spot monitor input signal is received.

The automatic reset circuit works according to the spot monitor control input signals such as ;

1. Alarm Sensors

The camera is selected by a spot monitor control input signal supplied from an alarm sensor. After about 60 seconds, the camera picture returns to sequential switching mode.

2. Intercom

(a) On line

The camera is selected by a spot monitor control input signal supplied from the intercom. The camera picture is displayed as long as the intercom is on line. It returns to sequential switching when the line is disconnected.

(b) Calling by the beeper/chime

The camera is selected by a spot monitor control input signal supplied from the intercom. After about 60 seconds, the camera picture returns to sequential switching mode.

3. Time Lapse VCR

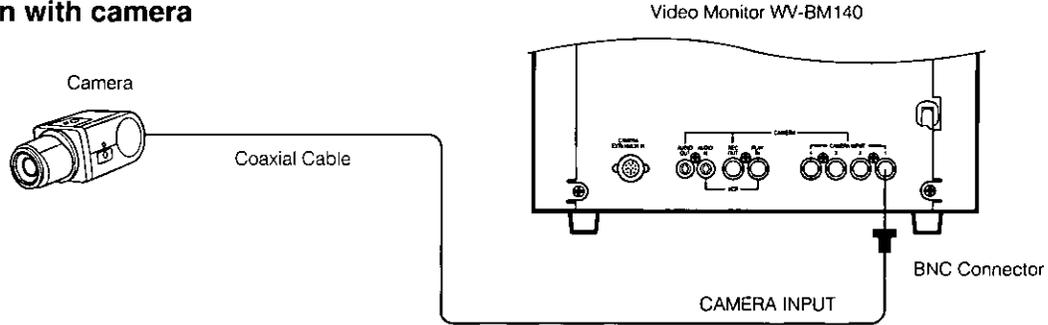
The camera is selected by a spot monitor control input signal supplied from the time lapse VCR. After about 60 seconds, the camera picture returns to the sequential switching mode.

CONNECTIONS

Precautions :

1. These connections should be made by qualified service personnel or system installers.
2. Keep the power switches of the monitor, optional camera, and optional camera extension unit in the OFF position during the connection.

■ Connection with camera



- Connect single coaxial cables between the cameras and monitor (CAMERA INPUT). The maximum coaxial cable length is as follows;

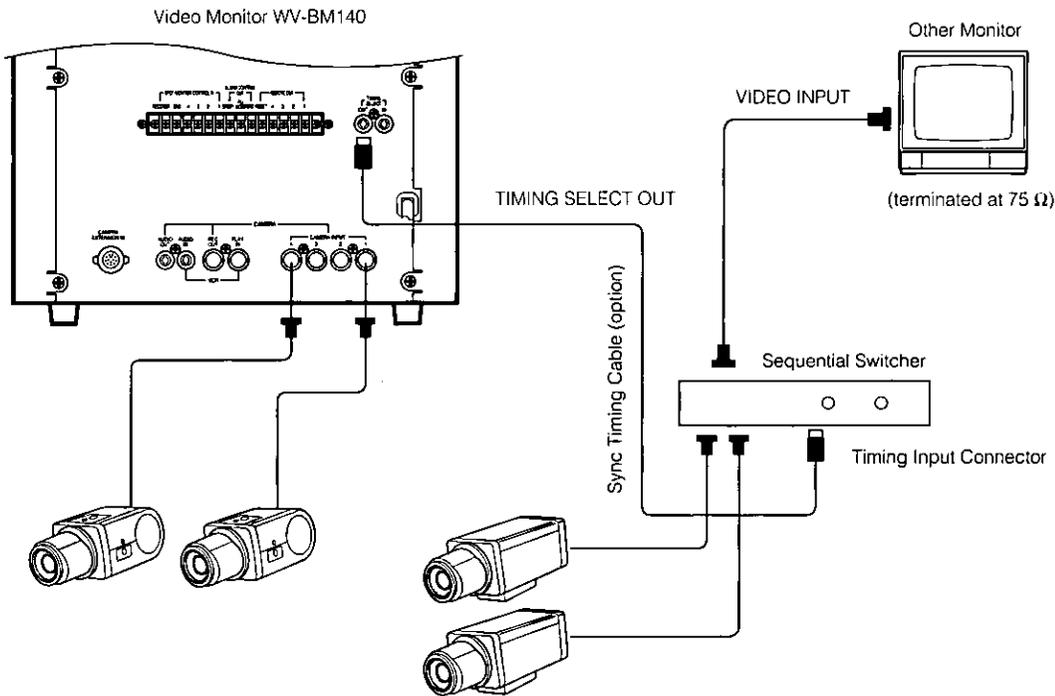
Coaxial Cable Type	Maximum Cable Length	DC R/1000 ft. of Inner Conductor
RG-59/U	200 m (660 ft.)	Less than 30 Ω
RG-6/U	500 m (1650 ft.)	Less than 12 Ω

The maximum DC resistance of the coaxial cable between the cameras and video monitor is 20 Ω.

Cautions

1. Keep the POWER switch of the monitor OFF during the camera connection.
2. Connect the specified cameras (multiplexed VP).
If other types of cameras are connected, the connection error protection circuit will be activated, so the CCTV system will not work.

■ Connection with Sequential Switcher

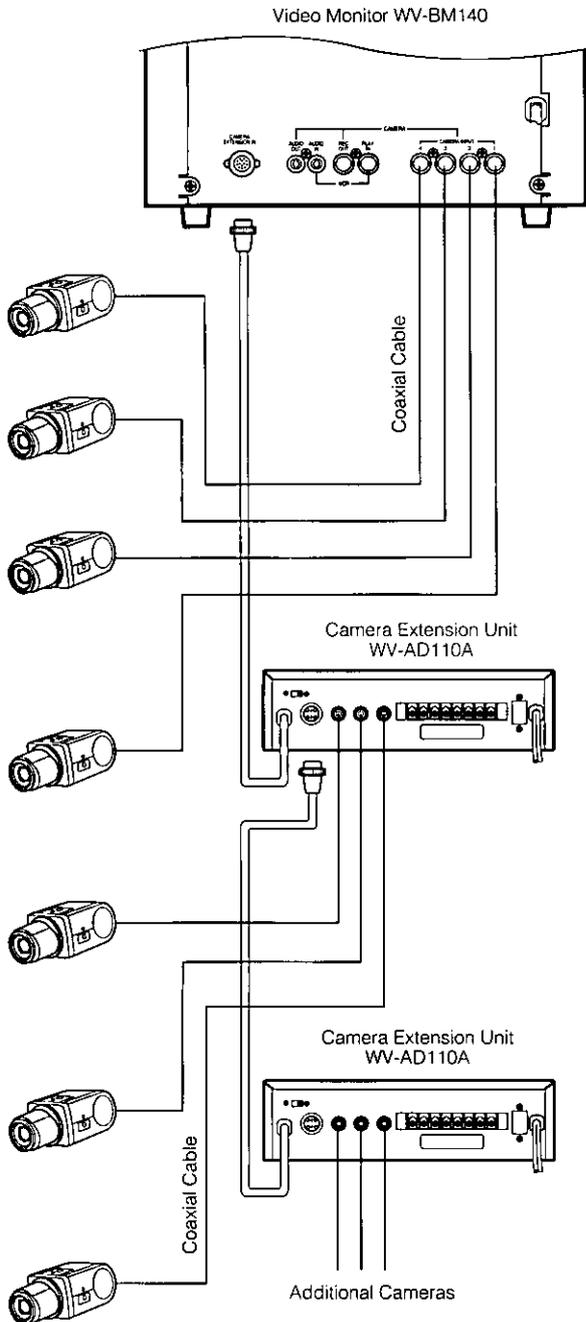


This system allows to synchronize the timing pulse on the monitor side.

- SET UP MENU setting
Set TIMING SELECT to INT.
- Sequential Switcher setting
Set SEQ TIME ADJ to EXT.

■ Basic System with Optional Camera Extension Unit

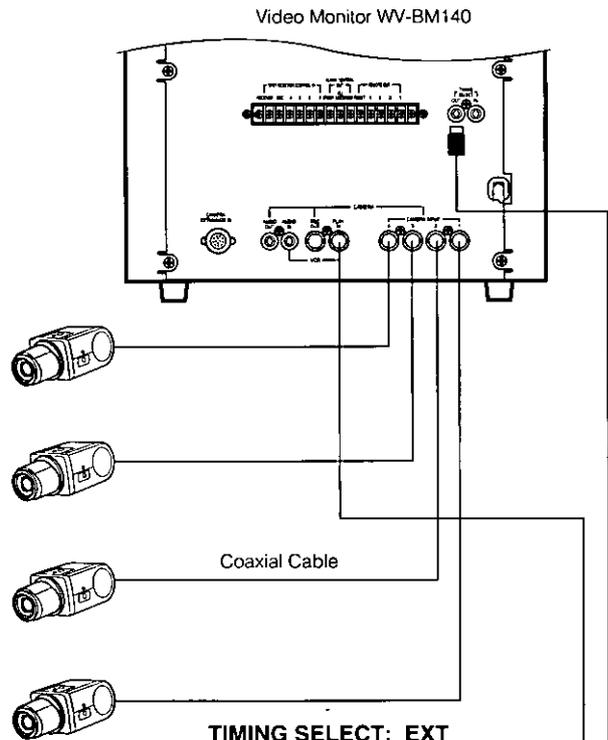
- Connect single coaxial cables between the cameras and monitor/camera extension unit (CAMERA INPUT).
- Connect the camera extension cable from the camera extension unit at the CAMERA EXTENSION IN connector on the monitor.
- Up to 2 Camera Extension Units can be connected.



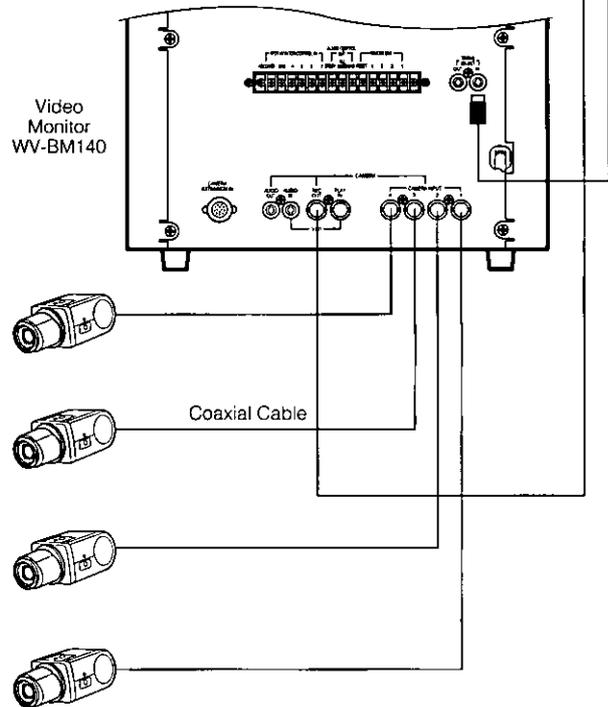
■ Additional Basic System

- Connect the coaxial cables between the cameras and monitor.
- Connect the Sync Timing Cable between the monitors.

TIMING SELECT: INT



TIMING SELECT: EXT

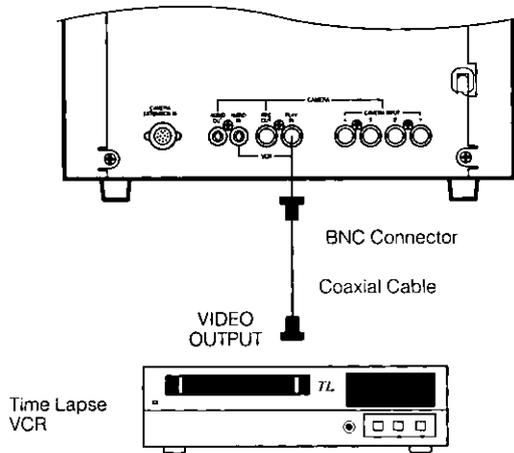


Notes:

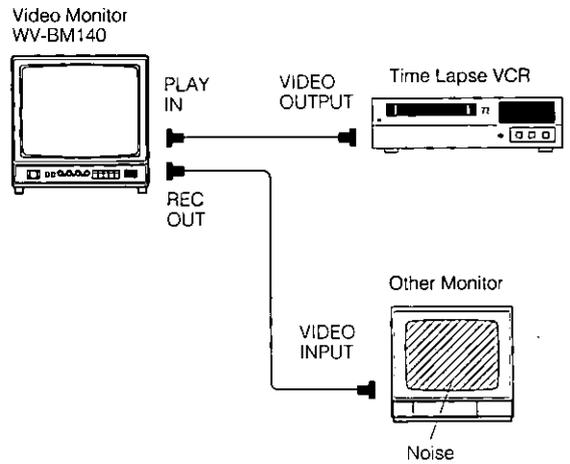
- Set TIMING SELECT in the SET UP MENU to INT for the master monitor and to EXT for the slave monitor.
- When no cameras are connected, the monitor picture is unstable. This is normal and not a malfunction.

■ Connection with the VCR

Video Monitor WV-BM140



Note: Avoid the following connection if you want to monitor the playback picture of a VCR.



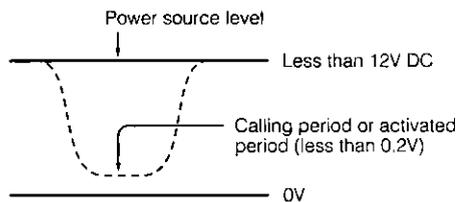
Connect a coaxial cable between the video output connector of the VCR and the PLAY IN of this monitor.

■ Connection with the Intercom and Alarm Sensors

- Use two-wire connections for the intercom system and alarm sensors/switches.
- The power source for the intercom system and alarm sensors/switches should be less than DC 12V.
- The line voltage for the activated intercom or alarm sensor/switch should be 0 - 0.2V DC.

For example, the maximum wiring length for an intercom system are as follows ;

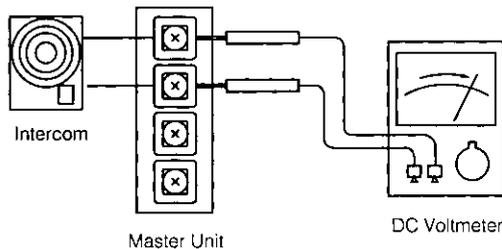
Wires (mm/Q'ty)	Equivalent AWG	SWG	Maximum Wiring length
0.18/12	22	23	150m
0.18/20	20	21	250m
0.18/30	18	19	400m
0.18/50	16	17	600m



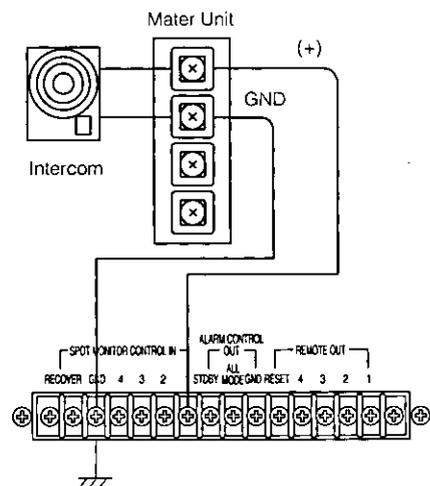
AWG: American Wire Gauge

SWG: British Legal Standard Wire Gauge

The polarity of the intercom system and the Spot Monitor Control In terminals of the monitor should be matched. Check the polarity of the intercom system with a tester



There are limits on the wiring length in connecting an intercom system, alarm sensor system, optional units, and video monitor.

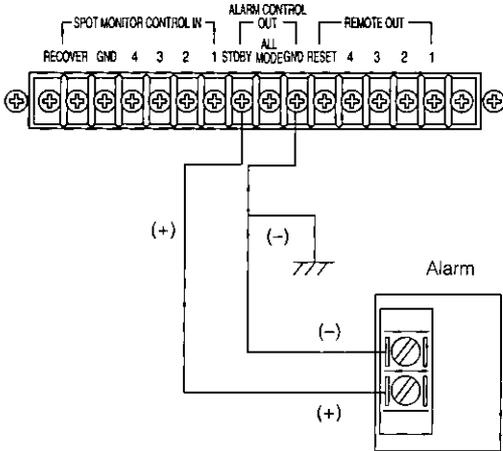


■ Connection with the Alarm Switch

The following two modes can be selected for the Alarm Control Out terminals:

STD BY: Alarm is activated in STD BY for DISPLAY MODE when SPOT CONTROL IN receives a signal from the intercom or an alarm sensor.

ALL MODE: Alarm is activated regardless of the selected DISPLAY MODE when SPOT CONTROL IN receives a signal from the intercom or an alarm sensor.

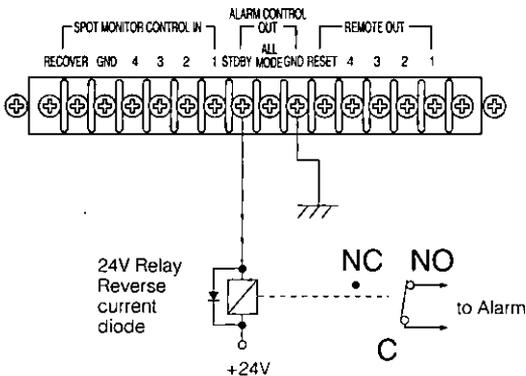


The polarities for the alarm and Alarm Control Output of the monitor should be matched.

The power capacity of the alarm should be DC24V, max. 100mA.

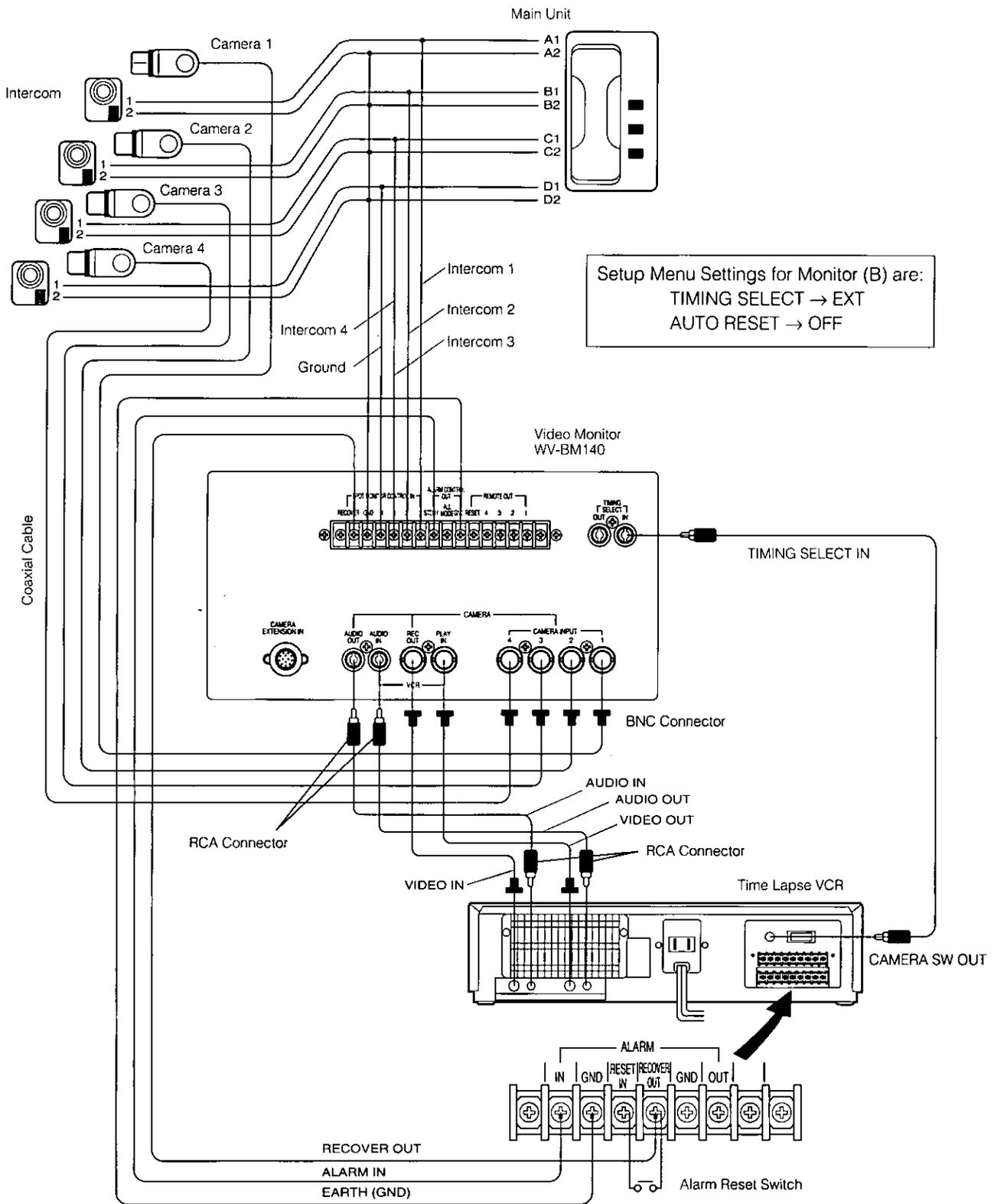
If the power capacity of the alarm is less than 100mA, DC 24V, the alarm can be connected directly to the Alarm Control Out terminal.

If the power capacity of the alarm is more than 100mA, DC24V, the alarm cannot be connected to the terminal directly. In this case, a relay circuit should be used for the alarm.



SYSTEM CONNECTION

■ Connection with Time Lapse VCR



Notes:

1. To connect the external alarm buzzer with this system, supply the alarm output signal from the Time Lapse VCR.
2. To cancel the alarm from the monitor side, supply the reset signal of this monitor to the RESET IN connector of the VCR. In this case, both signals must have positive polarity.
3. Refer to the Operating Instructions of the Time Lapse VCR for details on recording operations.

SPECIFICATIONS

Power Source:	120V AC 60 Hz		
Power Consumption:	Approx. 63W		
Tube Size :	322 mm (12-11/16") diagonal actual visual size		
	347 mm (13 - 11/16") diagonal tube screen size		
Camera Input:	1.0 V[p-p]/75 Ω, composite × 4 (BNC)		
Playback Input:	1.0 V[p-p]/75 Ω, composite × 1 (BNC)		
Record Output:	1.0 V[p-p]/75 Ω, composite × 1 (BNC)		
Power Supply for Camera:	Regulated current multiplex method		
Camera Switching :	Manual/Auto (sequence) with auto bypass		
Sequential Switching :	Approx. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30 sec. (selectable from SET UP MENU)		
Skip :	Automatic/Manual		
Auto Reset :	Automatic reset circuit operates 60 seconds after receiving the sensor signal. (Auto reset on/off mode can be selected from SET UP MENU)		
Resolution :	More than 1000 lines at center		
Sweep Linearity :	Horizontal: 5% or less		
	Vertical: 5% or less		
Sweep Distortion :	2% or less		
Scanning Frequency:	Horizontal: 15.734 kHz		
	Vertical: 59.94 Hz		
Audio Input :	-8 dB/Hi-z (pin-jack)		
Audio Output :	-10 dB/100 Ω (pin-jack)		
Speaker Output :	0.5 W		
Intercom / Sensor Input :	4 circuit (1 circuit/camera)		
Alarm Output			
Video All mode :	1 circuit		
Standby mode :	1 circuit		
Alarm time :	Approx. 1, 5, 10, 20, 30, 40, 50, 60 sec. (selectable from SET UP MENU)		
Timing :	Internal / External (selectable with SET UP MENU)		
Extension Adapter Input :	12-pin connector		
Camera Extension Length :			
	Coaxial	Maximum	DC R/1000 ft. of
	Cable Type	Cable Length	Inner Conductor
	RG-59/U	200 m (660 ft.)	Less than 30 Ω
	RG-6/U	500 m (1650 ft.)	Less than 12 Ω
	The maximum DC resistance of the coaxial cable between the cameras and video monitor is 20 Ω		
Ambient Operating Temperature :	-10°C - +50°C (14°F - +122°F)		
Dimensions :	320 (W) x 325.5 (H) x 328 (D) mm [12-5/8"(W) x 12-13/16"(H) x 12-15/16"(D)]		
Weight :	Approx. 10 kg (22 lbs.)		

Weights and dimensions shown are approximate.
Specifications are subject to change without notice.

OPTIONAL ACCESSORIES

CCTV Camera	WV-BP70, WV-BL90A, WV-BP102, WV-BP312
Camera Extension Unit	WV-AD110A

Panasonic

Video Imaging Systems Company

A Division of Panasonic Broadcast & Television Systems Company
A Unit of Matsushita Electric Corporation of America

Executive Office: One Panasonic Way 3E-7, Secaucus, New Jersey 07094

Regional Offices:

Northeast: 43 Hartz Way, Secaucus, NJ 07094 (201) 348-7303
Southeast: 1225 Northbrook Parkway, Suite 1-160, Suwanee, GA 30174 (770) 338-6835
Midwest: 1707 North Randall Road, Elgin, IL 60123 (847) 468-5200
Southwest: 8105 Beltsline Road, Suite 100, Irving TX 75063 (214) 915-1333
Western: 6550 Katella Ave., Cypress, CA 90630 (714) 373-7265

PANASONIC CANADA INC.

5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada (905)624-5010

PANASONIC SALES COMPANY

DIVISION OF MATSUSHITA ELECTRIC OF PUERTO RICO, INC.

San Gabriel Industrial Park, 65th Infantry Ave, KM. 9.5 Carolina, P.R. 00630 (809)750-4300