
	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.		



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



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

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

IMPORTANT SAFEGUARDS

1. Read all of these instructions.
2. Save these instruction for later use.
3. Unplug this appliance system from the wall outlet before cleaning
Do not use liquid cleaners or aerosol cleaner.
Use a damp cloth for cleaning.
4. Do not use attachments not recommended by the appliance manufacturer, as they may cause hazards.
5. Do not use this appliance near water for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Do not place this appliance on an unstable cart, stand, or table.

The appliance may fall causing serious injury to a child or adult, and serious damage to the appliance.

Use only with a cart or stand recommended by the manufacturer's instructions, and use a mounting kit approved by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



7. Slots and openings in the cabinet on the back or bottom are provided for ventilation, to insure reliable operation of the appliance, and to protect from overheating.
These openings should never be blocked by placing the appliance on a bed, sofa, rug or other similar surfaces. This appliance should never be placed near or over a radiator or heat register.
This appliance should not be placed in a built-in installation such as a bookcase, unless proper ventilation is provided.
8. This appliance should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
9. Do not allow anything to rest on the power cord. Do not locate this appliance where the cord will be abused by people walking on it.
10. Do not overload wall outlets and extension cords, as this can result in fire or electric shock.
11. Follow all warnings and instructions marked on the appliance.
12. Do not attempt to service this appliance yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

13. Unplug this appliance from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the appliance.
 - c. If the appliance does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the appliance to normal operation.
 - d. If the appliance has been exposed to rain or water.
 - e. If the appliance has been dropped or the cabinet has been damaged.
 - f. When the appliance exhibits a distinct change in performance this indicates a need for service.
14. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
15. Upon completion of any service or repairs to the appliance, ask the service technician to perform routine safety checks to determine that the appliance is in safe operating condition.

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1. Introduction

Samsung CCTV B/W Camera (SBC-330A(P)/331A(P)/300AP/301AP) is a surveillance camera that employs the latest CCD technology and can be connected to a CCTV system to provide the best surveillance capabilities.

Broadcast System

SBC-330A/331A	: EIA
SBC-330AP/331AP/300AP/301AP	: CCIR

Number of CCD pixels

SBC-330A	: 1/3" 27 megapixel (Normal)
SBC-331A	: 1/3" 41 megapixel (Hi-Band)
SBC-330AP/300AP	: 1/3" 32 megapixel (Normal)
SBC-331AP/301AP	: 1/3" 47 megapixel (Hi-Band)

Power Supply System

SBC-330A(P)/331A(P)	: AC 24V , DC12V
SBC-300AP/301AP	: AC 220V~240V

2. Features

High Sensitivity

Adopting the 1/3" Super HAD CCD that has the latest built-in microchip lens, the high sensitivity is realized.

Excellent Back Light Compensation

The built-in backlight compensation (BLC) function provides a clear, sharp image even when monitoring strongly backlit subjects.

Digital Line-lock

The control and reliability has been enhanced due to the Full Digital Line Lock, which allows users to adjust the Line Sync Phase.

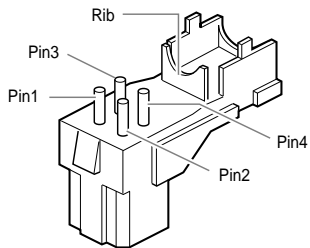
3. Installation

Precautions in Installation and Use

- ① Do not attempt to disassemble the camera yourself.
- ② Be cautious in handling the camera. Avoid striking or shaking the camera. Be cautious to avoid damage on the camera caused by improper storage or operation.
- ③ Do not expose this camera to rain or moisture. Do not operate this camera on a wet place.
- ④ Do not use strong or abrasive detergents when cleaning the camera body. Use a dry cloth to clean the camera.
- ⑤ Keep the camera at a cool place away from the direct sunlight. Leaving it under the direct sunlight may result in the malfunction of the unit.

Connecting Auto Iris Lens Connector

Prepare the following Auto Iris Lens Connector supplied with the camera.

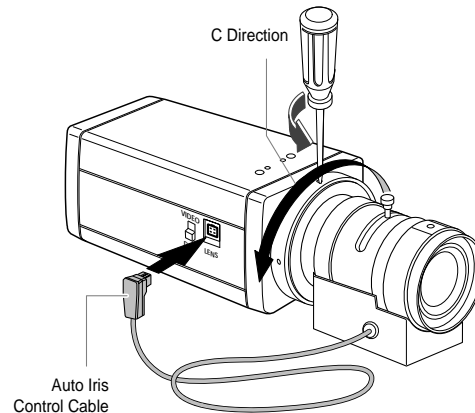


Connect the cable of the control cable, whose covering is stripped, to the Auto Iris Lens Connector as shown below.

Pin Number	DC Control Type	Video Control Type
1	Damp(-)	Power Source (+9V)
2	Damp(+)	Not used
3	Drive(+)	Video Signal
4	Drive(-)	GND

Mounting the Lens

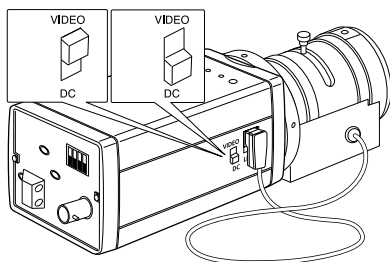
Loosen a screw fixing the Flange Back Adjustment Ring by turning it counterclockwise and turn the Adjustment Ring to the "C" direction (counterclockwise) until it stops. Failure to do so may result in a damage caused by the bump of the lens against the image sensor part in the camera when mounting the lens.



Setting Lens Selection Switch

When lens mounting is completed, set the Lens selection Switch on the rear of the camera according to the mounted lens type.

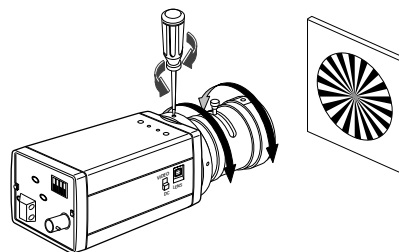
When the mounted lens is an Auto Iris Lens of the DC control type, set the Lens Selection Switch to "DC". When the mounted lens is an Auto Iris Lens of the Video control type, set the Lens Selection Switch to "VIDEO".



Adjusting Back Focus

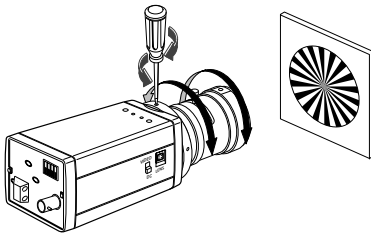
Although the Back Focus of the camera has been adjusted in the factory before its shipment, the focus may not be accurate for a certain type of the lens. In this case, follow the procedures below to adjust the Back Focus. First, following is how to adjust the Back Focus of the Fixed Focus Lens.

- ① Lightly loosen the screw fixing the Back Focus Adjustment Ring using a screwdriver.
- ② Image a vivid subject (with check patterns) at a distance of more than 10m away and turn the Focus Ring to the infinity (∞) position.
- ③ Adjust the Back Focus Adjustment Ring to obtain the clearest image of the subject.
- ④ Fasten the screw fixing the Back Focus Adjustment Ring.



The following describes how to adjust the Back Focus when using a Zoom lens.

- ① Lightly loosen the screw fixing the Back Focus Adjustment Ring using a screwdriver.
- ② Image a vivid subject (with check patterns) at a distance of 3~5m away and adjust the zoom of the lens to TELE as far as it goes. Then adjust the Focus Ring of the lens to obtain the clearest image of the subject.
- ③ Adjust the zoom of the lens to WIDE as far as it goes. Then turn the Back Focus Ring of the camera to obtain the clearest image of the subject.
- ④ Repeat no. ② & ③ 2~3 times to exactly coincide the zoom focus from TELE and with that from WIDE.
- ⑤ Fasten the screw fixing the Back Focus Adjustment Ring.



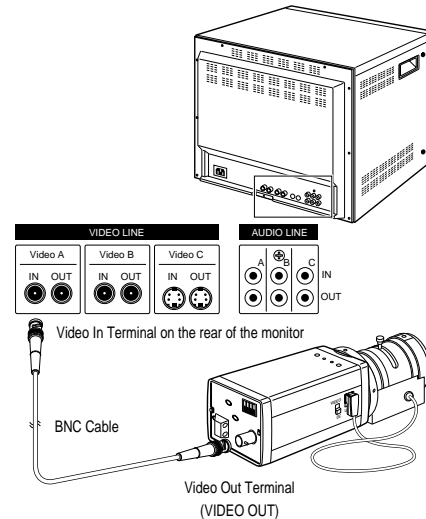
Note:

Turning the Back Focus Adjustment Ring to the "C" direction beyond the adjustable range makes a sound at the limit.

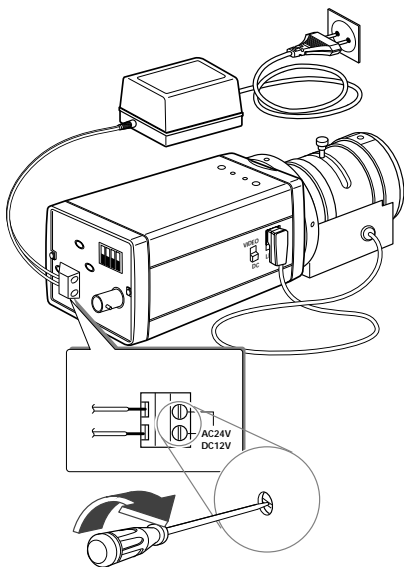
Connecting Cable

After mounting the lens and setting the Lens Selection Switch, connect the prepared cable to each terminal of the camera.

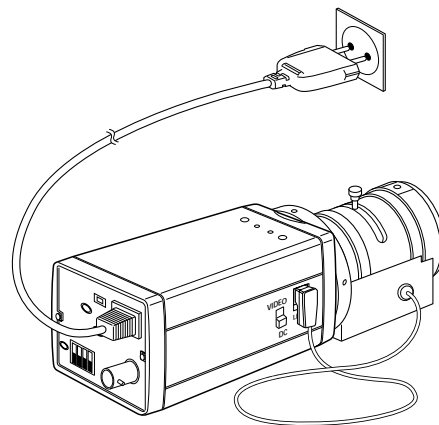
- ① First, connect one end of the BNC cable to the Video Output Terminal (VIDEO OUT) of the camera.
- ② Then connect the other end of the BNC cable to the Video Input Terminal of the monitor.



- ③ AC24V/DC12V Power Input Camera.
Connect 2 lines of the power adapter using a Phillips screwdriver to the Power IN Terminal of the camera as shown below.
- ※ Without the distinction of the polarity, connect to the AC 24V or AC 12V power source.



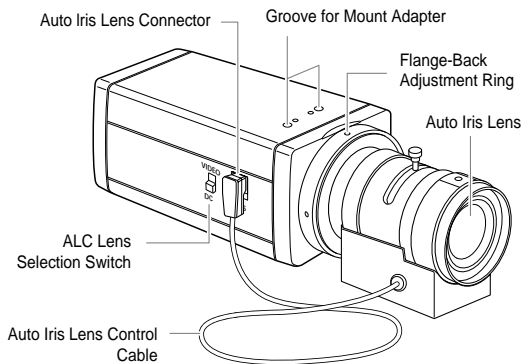
- AC230V Power Input Camera
Connect the power input cord to the AC 230V power source.



4. Names and Functions of Parts

Names and Functions of Parts

• Side View



Groove for Mount Adapter

Use this groove for fixing the mount adapter to be connected to the bracket with screws to mount the camera on the bracket.

Auto Iris Lens (Option)

Lens to be mounted on the camera

Note

When the surface of the camera lens is contaminated, wipe the surface gently with a tissue for lens or a cotton cloth applied with ethanol.

Auto Iris Lens Connector

Used for supplying power, which is required to control the iris of the lens, as well as control signal, video signal, or DC signal to the Auto Iris Control Lens.

Auto Iris Lens Control Cable

Used for transmitting the control signals to the camera to control the iris of the lens.

Flange-Back Adjustment Ring

Used for adjusting the Back Focus.

ALC Lens Selection Switch

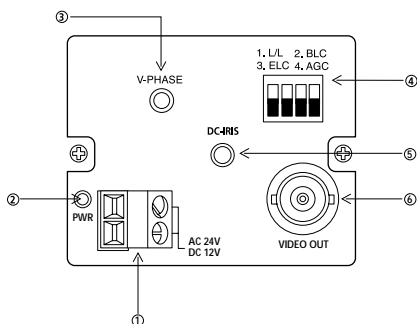
Used when selecting the type of Auto Iris Lens to use.

DC : Select this switch to DC when Iris Lens requiring DC control signal is mounted.

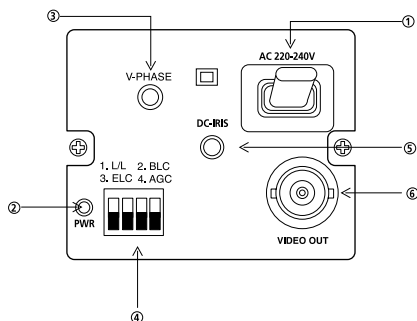
VIDEO : Select this switch to VIDEO when Auto Iris Lens requiring VIDEO control signal is mounted.

• Rear Panel

AC24V/DC12V Power Input Camera



AC230V Power Input Camera



① Power Connection Terminal

Terminal to be connected to the power (adapter) cable- Connect it to AC 24V or DC 12V.

② Power Indication LED

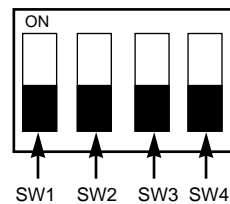
While the power is properly supplied to the camera, the LED is turn on.

③ V-Phase Control

In the Line Lock mode (SYNC LL), use a tool such as a screwdriver to adjust the vertical sync phase.

④ Function Switches

- | | |
|---------|---------|
| 1. L/L | 2. B/LC |
| 3. E/LC | 4. A/GC |



1) SW1(L/L):

If this switch is set to OFF, the camera will operate in the internal synchronization mode, and if the switch is set to ON, the camera will operate in the line lock mode.

If you are monitoring in the automatic switching mode with multiple cameras connected to a sequential switcher, and the cameras are set to INT (internal synchronization) mode, then picture rolling or flickering will occur during switching from one camera to another.

Such picture rolling on the monitor can be remedied by setting this switch to ON and then adjusting the vertical sync phase with the V-Phase Control.

- ※ When using DC 12V power, set the L/L switch to OFF.

If the L/L switch is set to ON, the camera will not operate normally.

2) SW2(BLC):

This switch turns on or off the back light compensation (BLC) function. When there is a spotlight or strong light from behind the subject, the subject may appear dark on the monitor. In such backlighting conditions, set this switch to ON for clear viewing.

3) SW2 (ELC):

Use this switch with the Manual Iris Lens. While this switch is ON, the speed of the electronic shutter varies with the brightness of the subject from 1/60 to 1/100,000 sec for automatically controlling the brightness of the screen. However, with the Auto Iris Lens (DC or Video Control), be sure to switch OFF.

4) SW4(AGC):

This switch turns on or off the automatic gain control (AGC) function, which is a function that automatically increases the camera's sensitivity when ambient light drops below a preset level. Set this switch to ON to automatically adjust the "gain".

⑤ DC Iris Level Control

When the ALC Lens Selection Switch is set to DC, adjust this Iris Level Control using an adjustment rod such as a screwdriver.

⑥ Video Output Terminal

This is a terminal to be connected to the Input Terminal of the monitor. Through this terminal, the video signals are output.

5. Product Specifications

SBC-330A/331A

Item	Contents
Product Type	CCTV B/W Camera
Broadcasting System	EIA STANDARD SYSTEM
CCD	1/3" IT type S-HAD CCD
No. of Pixel	330A : 510(H) x 492(V) 331A : 768(H) x 494(V)
Scanning Type	525 Line, 2:1 Interlace
Frequency	INTERNAL : 15,750 Hz(H) 60 Hz(V) LINE LOCK :15,750 Hz(H) 60 Hz(V)
Syne Type	INTERNAL LINE LOCK(When AC24V power source is used)
Resolution	330A : 380TV Lines 331A: 550TV Lines
S/N Ratio	more than 50dB
Min. Object Illumination	0.1 Lux F1.2 (50 IRE)

ALC /ELC	ALC DC IRIS LENS VIDEO LENS ELC Electronic SHUTTER IRIS function
Video Output	COMPOSITE VIDEO OUT 1V p_p 75 Ω /BNC
Power Source	AC24V ± 10%(60Hz ± 0.1Hz) DC12V + 10%-5%
Power Consumption	About 2 Watts
Operating Temperature	-10℃ ~ +50℃
Operating Humidity	~90%
Size	65(W) x 52(H) x 133(L)mm (BNC included)
Weight	About 420g
Altitude	Below 3000m

SBC-330AP/331AP/300AP/301AP

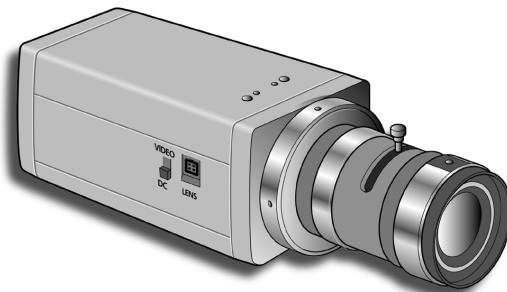
Item	Contents
Product Type	CCTV B/W Camera
Broadcasting System	CCIR STANDARD SYSTEM
CCD	1/3" IT type S-HAD CCD
No. of Pixel	330AP/300AP : 500(H) x 582(V) 331AP/301AP : 752(H) x 582(V)
Scanning Type	625 Line, 2:1 Interlace
Frequency	INTERNAL : 15,625 Hz(H) 50 Hz(V) LINE LOCK :15,625 Hz(H) 50 Hz(V)
Syne Type	INTERNAL LINE LOCK(When AC power source is used)
Resolution	330AP/300AP : 380TV Lines 331AP/301AP: 550TV Lines
S/N Ratio	more than 50dB
Min. Object Illumination	0.1 Lux F1.2 (50 IRE)

ALC /ELC	ALC DC IRIS LENS VIDEO LENS ELC Electronic SHUTTER IRIS function
Video Output	COMPOSITE VIDEO OUT 1V p_p 75 Ω /BNC
Power Source	300AP/301AP AC220V~240V±10%(50Hz±0.1Hz) 330AP/331AP AC24V±10%(50Hz±0.1Hz) DC12V+10%-5%
Power Consumption	300AP/301AP: About 3 Watts 330AP/331AP: About 2 Watts
Operating Temperature	-10℃~+50℃
Operating Humidity	-90%
Size	65(W) x 52(H) x 133(L)mm (BNC included)
Weight	300AP/301AP : About 520g 330AP/331AP : About 420g
Altitude	Below 3000m

Digital B/W Camera

SBC-330A / 330AP
SBC-331A / 331AP
SBC-300AP / 301AP

User Guide



Part No.: AB68-00346A (Rev. 01)
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