

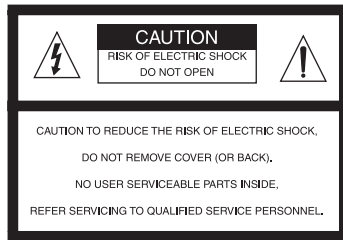
Operating Instructions

ZC-AF16 (PAL, high-resolution)

Before installing and using the camera, please read these instructions thoroughly and retain them for later reference.

E

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This symbol 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.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warning

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Regulatory Notices

For U.S.A

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation! This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

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FEATURES

The power zoom color video camera is designed for use in monitoring system.

- High resolution and high sensitivity with a 1/4 inch CCD (Charge Coupled Device)
- High magnitude of zoom lens with optical X 16, Digital X128
- Auto Focus
- Auto White balance
- Auto exposure with DC Iris control
- On Screen display

Cautions for Safe Operation

Power Supply

This camera must always be operated a 12V DC power supply.

Handling of the unit

Be careful not to spill water or other liquids on the unit, or to get combustible or metallic material inside the body. If used with foreign matter inside, the camera is liable to fail, or to be a cause of fire or electric shock.

Operating and storage location

Avoid viewing a very bright object (such as light fittings) for an extended period. Avoid operating or storing the unit in the following locations.

Extremely hot or cold places (operating temperature -10°C ~ 50°C , however, we recommend that the unit be used within a temperature range of 0°C ~ 45°C)
Damp or dust place

Where it is exposed to rain

Where it is subject to strong vibration

Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

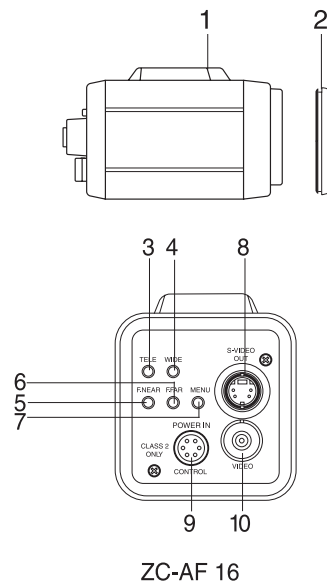
Care of the unit

Remove dust or dirt on the surface of the lens with a blower.

Use a dry soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent, then wipe dry.

Avoid the use of volatile solvents such as thinners, alcohol, benzene, and insecticides. They may damage the surface finish and/or impair the operation of the camera.

Operating Controls and Their Functions

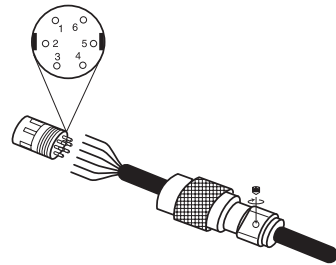


Control names and Functions

1. Tripod adaptor
This adaptor can also be attached on the bottom of the camera.
2. Lens mount cap
3. When push the TELE Key, picture is telephoto
4. When push the WIDE Key, picture is wide angle
5. FOCUS NEAR Key
In a manual situation, focus get near.
6. FOCUS FAR Key
In a manual situation, focus get far.
7. MENU Key
If you want to set up a diverse function, you can push this button.
8. Video output (S-Video type)
Connect to the S-Video in connector of a monitor.
9. Interface of camera control JACK (6Pin Din Jack Type)
 - Connect to an external voltage controller
 - You can supply a camera with power from this. (DC12V)
10. Video output(BNC type)
Connect to the video in connector of a monitor.

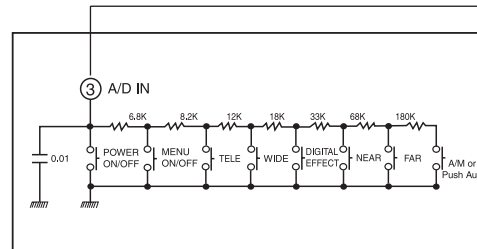
POWER IN/CONTROL

You can adjust focus and zoom by a pin terminal on the back side of the camera.



PIN NO.	Description	Color*
1	RXD (RS232)	Green
2	TXD (RS232)	White
3	External Key input (A/D IN)	Brown(Blue)
4	NC.	Yellow
5	GND	Black
6	Power input (DC 12V)	Red

* is the color of the cable.



MENU 1	
INITIAL SET	ON
BACKLIGHT	OFF
COLOR	ON
NEGATIVE	OFF
FOCUS	PUSH AUTO
FLICKERLESS	OFF
WBC MODE	AUTO

Setting The Menu

- The On Screen Display menu can be used by MENU, TELE, WIDE, F.NEAR, F.FAR Key.

Menu 1

1. INITIAL SET

Set the initial mode ON, the changed data are renewed.

2. BACKLIGHT

In case of the excessive light is behind the center object, It is necessary to prevent the center object too darken. Turn the BACKLIGHT ON, then the center object became lighter.

3. COLOR

Use for changing color and monochrome of picture.

- ON: Color mode
- OFF: Black and White mode

MENU 1	
INITIAL SET	ON
BACKLIGHT	OFF
COLOR	ON
NEGATIVE	OFF
FOCUS	PUSH AUTO
FLICKERLESS	OFF
WBC MODE	AUTO

4. NEGATIVE

Use for changing NEGATIVE and POSITIVE mode.

- ON: NEGATIVE mode
- OFF: POSITIVE mode

5. FOCUS

AUTO/MAN: Set the focus mode to Auto or Manual.

PUSH AUTO: Set the focus mode to Push Auto mode.

6. FLICKERLESS

Set the FLICKER ON mode, then the flicker is removed.

- In case of NTSC system: Shutter Speed 1/100 sec
- In case of PAL system: Shutter Speed 1/120 sec



7. WBC MODE

- **AUTO**: WB Range 2800°K ~ 8000°K
- **SPECIAL (SWB)**: Under the special WB condition (Differ from curve of the control color temperature), Adjust Red and Blue to perform a desired White Balance.



Set the WB mode is SPECIAL mode using F(+) or F (-) key code. The RED/BLUE ADJUST menu is appeared.

Adjust the Red to a desired value by using F(+) or F (-) key code.

Adjust the Blue to a desired value by using F(+) or F (-) key code.

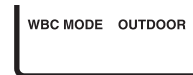
The whole MENU is displayed using TELE or WIDE key code. Moving another item of MENU is available.

Caution: The values of "RED ADJUST" and "BLUE ADJUST" are not changed when the "INITIAL SET" is set to "ON"

- **INDOOR(※)**: Use to set the preset WBC INDOOR Mode (3200°K)



- **OUTDOOR(※)**: Use to set the preset WBC OUTDOOR Mode (5100°K)



- **MANUAL(MWB):** Hue control adjustment is available manually. Adjust MWB CONTROL to a desired value.



Set the WB mode is MANUAL mode using F(+) or F (-) key code. The MWB CONTROL menu is appeared.

Adjust the MWB CONTROL to a desired value.

The whole MENU is displayed using TELE or WIDE key code. Moving another item of MENU is available.

- **PUSH AUTO(PWB):** A regular environment or object was forced to do White Balance action. And then the PWB mode turn off (Manual WB mode). It makes good use of Manual WB mode in the usual environment. It can prevent unsuitable color reproduction or decolor on the act of White Balance.



Set the WB mode is MANUAL mode using F(+) or F (-) key code. The MWB CONTROL menu is appeared.

Adjust the PUSH AUTO mode ON, WB act automatically.

Adjust the PUSH AUTO mode OFF, WB act manually.

The whole MENU is displayed using TELE or WIDE key code. Moving another item of MENU is available.

MENU 2	
CAMERA ID	OFF
SHARPNESS	10
BRIGHTNESS	42
ZOOM START	x1
ZOOM END	x128
FOCUS FROM	1CM
AE MODE	AUTO

Menu 2

8. CAMERA ID

To connect a large number of camera, It can be assigned to identification number to each camera control easily (OFF, 1~255 : total numbers of ID are 256).

CAUTION: To transfer ID code of camera , set the ID number of camera in first, And then the ID number display continuously.

9. SHARPNESS

Use to change the contour of scene (0~15).

10. BRIGHTNESS:

Use to change the brightness of scene (0~99).

11. ZOOM START (x1~x15)

Use to change the start magnification of zoom.(0~99).

12. ZOOM END (x2~)

Use to change the end magnification of zoom.

Caution :: This value must be larger than the value of "ZOOM START"

13. FOCUS FROM (1CM~ 10M)

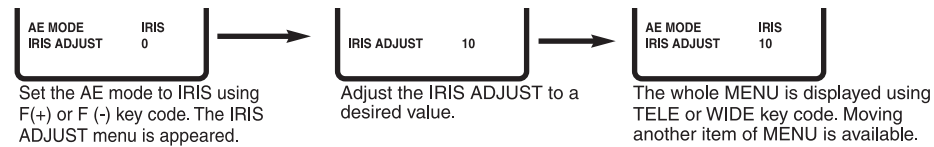
Use to change the object distance limit for focusing.

For example, "1CM" means that the camera is able to focus on the objects which are from a distance of 1cm to infinite.

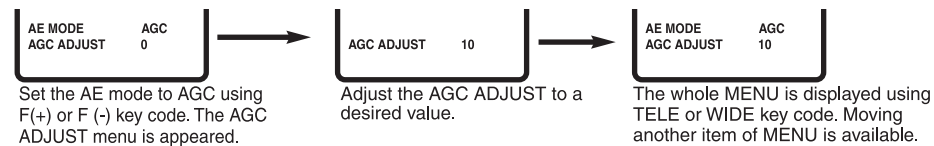
14. AE MODE

In the situation is unadjustable exposure, AE mode support to make a fit exposure.

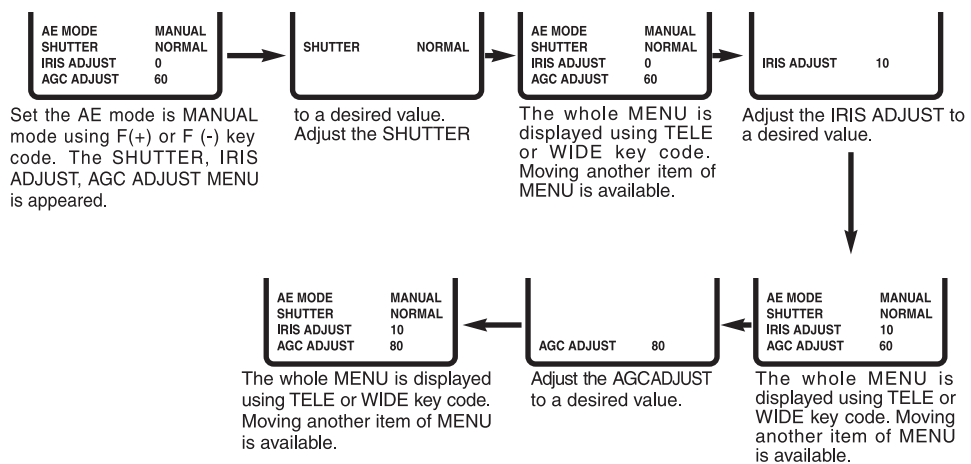
- **AUTO**: Use to compensate the exposure automatically.
- **SHUTTER**: Use to change the Shutter Speed control. In this time, AE mode act automatically (8 steps control is available).
- **IRIS**: Use to change the value of Lens's Iris (IRIS of lens is fixed manually, and the action of exposure compensation depend on its of AGC).



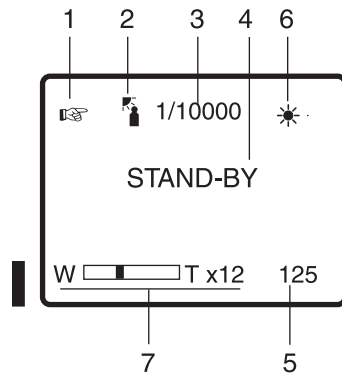
- **AGC**: The change of AGC is available (00~255). (AGC of camera is fixed manually and the action of exposure compensation depend on its of IRIS of LENS).



- **MANUAL:** Use to set the shutter speed, IRIS and AGC manually.






Some of these functions will be displayed every time the camera is operated and then disappeared after 5 seconds.



On-Screen Display

FUNCTION	OSD Format	Description
1 Focus Mode	Non display	Focus Auto Mode
		Focus Manual mode
2 Back Light	Non display	Back Light OFF
		Back Light ON
3 Shutter Speed	Non display	Normal Shutter (NTSC:1/60 PAL: 1/50)
	1/125 ⋮ 1/10,000	8 variable steps.
4 STAND-BY	Indicate the camera stand-by during the camera's power turning on.	
5 CAMERA ID	According to write the identification number to each camera, multi-point control is available (PC Control 000~255)	

On-Screen Display

FUNCTION	OSD Format	Description
6 WBC Mode	Non display	White Balance AUTO
	SWB	Special Auto White Balance; Adjustment Mode according to change of external illuminant. RED ADJUST and BLUE ADJUST (0~255) are available. After changing R/B value, the maintenance mode is "AUTO".
	☀	WB Preset for INDOOR (3200°K)
	☀	Wb Preset for OUTDOOR (5100°K)
	^M _w	Manual WB Adjustment; In manual mode the HUE control is available (0 ~ 99)
	PWB	Push Auto White Balance; Turn this mode ON, the white trace automatically. Turn this mode OFF, preserve the white of final auto tracing action (Manual)
7 ZOOM Display	W  T x16	In case of 16X Zoom
	W  T x32	In case of 32X Zoom (Digital Zoom 2X)
	W  T x64	In case of 64X Zoom (Digital Zoom 4X)

Specifications

Image device	1/4" interline transfer CCD NTSC, High resolution : 380,000 NTSC, Normal resolution : 250,000 PAL, High resolution : 440,000 PAL, Normal resolution : 290,000
Sync system	Internal sync
Horizontal resolution	Approx.450 Line (NTSC, High resolution) 320 Line (NTSC, Normal resolution) 450 Line (PAL, High resolution) 320 Line (PAL, Normal resolution) (at center of screen)
Lens	x16 Optical Zoom(f=3.9~63mm, F1.6 - 2.4 Auto IRIS)
Digital Zoom	Normal resolution : x32 Zoom (Digital Zoom x2) High resolution : x128 Zoom (Digital Zoom x8)
Minimum illumination	1 Lux (F1.6)
S/N	More than 48dB (AGC OFF)
Automatic control	Auto Exposure (DC iris, AGC) Auto white balance Auto focus (Zoom tracking)

Specifications

Power requirement	12V DC
Video output	BNC-type, S-Video-type (1.0Vp-p, 75ohms)
Power consumption	Max 4.7w
operating temperature	-10°C ~ 50°C
Operating Humidity	0%~80%
Storage temperature	-20°C to +60°C
Dimensions	59.4mm(W) x 61.2mm(H) x 95mm(D)

Specifications are subject to change without notice.



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P/NO.: 3834RS0071J