

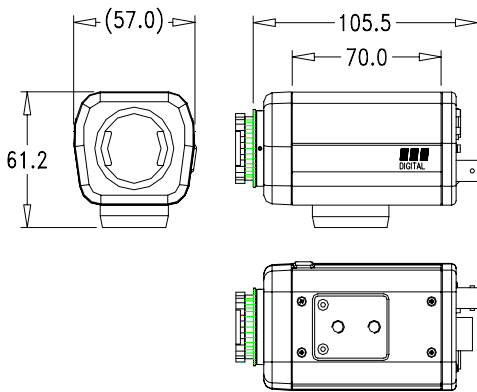
INSTRUCTION MANUAL

TC6024L-CB60HL-6-TDN2-AC2-CG

About this manual

Before installing and using the camera, please read this manual carefully. Be sure to keep it handy for later reference. This instruction manual covers for use in the following models. Any difference among the those models is indicated when necessary.

Dimensions : mm



PRECAUTIONS

- Do not open or modify
Do not open the cabinet exet during maintenance and installation, as it may be dangerous and cause damages.
- Do not put objects inside the unit
Make sure that no metal objects or flammable substances get insdie the camera. It could cause fire, short-circuits or damages.
- Be careful when handling the unit
To prevent damage, do not drop the camera or subject it to strong shock or vibration.
- Install away from electric or magnetic fields
- Protect from humidity and dust
- Protech from high temperature
Be careful when installing colose to the ceiling , in a kitchen or boiler room, as the temperature may raise to high levels.
- Cleaning
Dirt can be removed from the cabinet only by wiping it with a soft cloth moistened with a soft detergent solution.
- Mounting Surface
The mounting surface material must be strong enough to secure the camera.

TROUBLESHOOTING

Before sending the camera out for repair, check the items below. If the problem persists after checking these items, contact your service center.

■ If no image appears

- Is the coaxial cable attached securely?
- Are the power and voltage normal?
- Is there adequate illumination?

■ If the image is unclear

- Is the lens in focus?
- Is the lens dirty?
- Dirt of fingerprints on the lens can adversely affect the images. Gently wipe any dirt or fingerprints off the lens with a soft cloth or lens cleaning paper and cleaning fluid (commercially available).
- Is the monitor adjusted correctly?

WARNING:

TO PREVENT THE RIST OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

SPECIFICATION

MODEL	TC6024L-CB60HL-6-TDN2-AC2-CG	
General Spec	NTSC	PAL
CCD Type	1/3" 410K Pixels Color	1/3" 470k Pixels Color
Total number of pixels	811(H) X 508 (V)	795(H) X 596(V)
Min illumination	0.05Lux (F1.2 , 30IRE , B/W)	
Video Output	1.0V p-p/75 ohm Composite	
Resolution	450 TV Lines	
S/N Ratio	46dB or more(AGC off)	
Shutter speed	1/60s - 1/100,000s	1/50s - 1/100,000s
Sync System	Internal or External	
White Balance	Auto (DIP Switch Select Auto/Manual)	
Connector		
Power Input	Terminal	
Video Output	BNC	
Electric Spec		
Voltage	DC 12V (11 - 20V) or AC24V (20 - 27V)	
Power Consumption	Max [DC12V : 2.7W , AC26V :2.5W]	
Mechanical Spec		
Lens	C / CS	
Dimension	57.0(D)mm X 61.2(H)mmX105.5(L)mm	
Weight	210g (Without lens)	
Case Color	CG	
Operation temp	-10°C ~ +55°C	
In storage temp	-20°C ~ +70°C	
Operation humidity	Under 90% (Non-condensing)	

INSTALLATION

Connect the coaxial cable (with pre-wired BNC plug) to the BNC connector (Video) of the camera. If you are using an automatic iris lens with the camera, the lens has to be connected to the A-Iris socket of the camera. If you are using a lens with manual or fixed iris, this socket is not used. The operating voltage is either connected to the designated terminal block (12 V/DC or 24 V/AC). Operation of the camera will be confirmed by the power LED at the rear side of the camera.

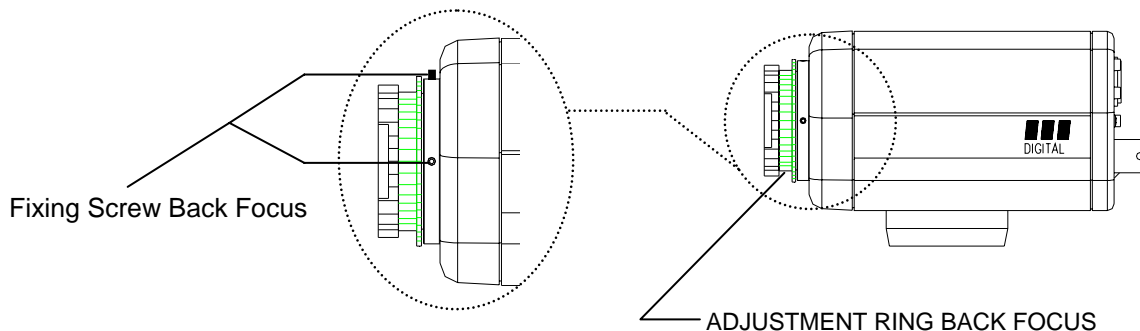
■ Focusing the Camera Lens

After you have selected the correct picture detail you have to adjust the lens focus. The focus adjustment needs to be done with the iris fully open, since the camera has the smallest depth of focus in this position. If the focus adjustment was not done with the iris completely open, the picture would appear to be sharp during the day but slowly getting out of focus the more the light disappears. To fully open the lens, use a grey filter in front of the lens, provided you are using a lens with automatic iris. Adjust the focus while the iris is fully open using the lens focus ring. Make sure the most important picture details are in optimum focus (use a service monitor). If it is not possible to bring the picture into focus, please adjust the back focus of the camera as described above.

■ Adjustment of Back Focus

This adjustment should only be carried out, if the lens cannot be focused properly through the entire picture using the lens focus ring. In this case please proceed as follows:

1. Loosen the Allan head screw with the attached Allan head key. For large distances, turn the focus ring of the lens almost (0.5 cm) to the "endless" limit position. If you need to focus an object near the camera, turn the focus ring of the lens to a position 1 cm before the "near" limit position.



2. Use the back focus adjustment screw to adjust the distance between lens and CCD chip until the picture appears to be in focus. Then fix the Allan head screw using the Allan head key.

3. Finally, focus the picture using the lens focus ring.

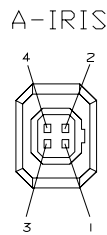
■ Adjustment of DC / AI lenses

To adjust a lens with automatic iris (DC driven or video driven) to the camera, please proceed as follows:

1. Turn the Level potentiometer (position: AI lenses at the lens itself, DC lenses: at the camera) to the max. position H (turn right). The monitor picture then appears to be too bright.
2. Slowly turn the Level potentiometer back until the monitor picture appears to be perfect and is not too bright anymore. Then turn the potentiometer back to the right (in direction "H") just a little bit.
3. Check the lens performance by using the camera under different and/or changing light conditions.

■ Connection of lens socket "A-Iris"

Video Driven
(AI)
1. +8,5 V DC
2. NC
3. Video signal
4. GND



DC Driven (DC)
1. Control -
2. Control +
3. Drive +
4. GND

■ Adjustments (Lens/IRIS/BLC)

Switches "LENS" and "IRIS"

If you are using the camera with a manual or fixed iris lens, the switch "IRIS" has to be set to position EE (auto shutter). If you are using the camera with an automatic iris lens (switch in position AI), you can use the "LENS" switch to select the correct lens type. The cameras are suitable for DC driven lenses (switch in position DC) and video driven lenses (switch in position AI). The lens control of DC driven lenses is adjusted with the "Level" potentiometer at the camera.

Switch "BLC" (Backlight)

With an activated backlight function persons in front of the camera can still be recognised even if the background is very bright or contains peak light.

Please see that the backlight function is only available if the camera is used with a manual lens (switch IRIS in position EE).

CAMERA SETTING

● Correcting Flicker (1)

Correct screen flickering that occurs when positioned under fluorescent lights that use a 60(50) Hz power supply frequency.

ON	Under 60(50) Hz fluorescent lights
OFF	Normal setting

● Compensating for backlight (2)

ON	When back light is so bright
OFF	Normal setting

CAUTION : It will be correctly set by adjusting level volume 7.

● Confirming the iris setting (3)

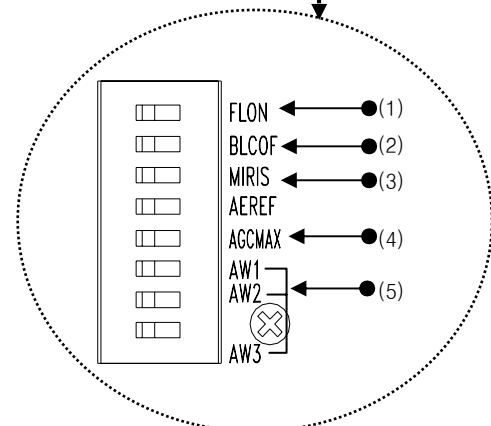
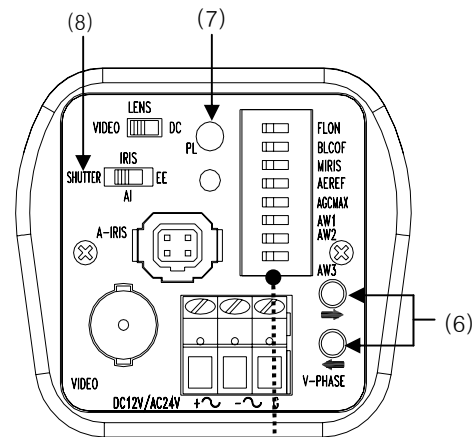
ON	The default setting when DC auto-iris lens is installed
OFF	The default setting when fixed iris lens is installed

CAUTION : The iris setting is preadjusted as the best condition for use at time of factory shipment, so it isn't necessary to change settings

● Setting gain control (AGC) (4)

For adjusting the sensitivity of the camera. Use this setting for shooting in dark environments.

ON	Normal setting
OFF	Set this when there is excessive noise



● Setting white balance (5)

Adjusts the balance of colors. Basically AUTO TRACKING WHITE BALANCE is default setting. When this function does not work properly, select other settings.

Settings	SW6	SW7	SW8	Contents
AUTO TRACKING WHITE BALANCE	OFF	ON	OFF	Normal setting
AUTO WHITE BALANCE	OFF	OFF	OFF	Automatically adjusts the white balance when objects are near
MANUAL WHITE BALANCE	OFF	OFF	ON	Fine-tune the white balance manually. Adjust the color using (6) button. (Left:Red, Right:Blue). If an AC24V adapter user sets MANUAL WHITE BALANCE, sync adjustment cannot be performed. To perform sync adjustment, do it with button (6) before setting MANUAL WHITE BALANCE.
WHITE BALANCE LOCK	OFF	ON	ON	Adjust the white balance when the brightness is constant. After setting the switch at left, keep pressing the white balance lock button and release it to set it.
INDOOR SETTING (LIGHT 1)	ON	OFF	OFF	When the room is lit by fluorescent or incandescent lights (3200°K)
INDOOR SETTING (LIGHT 2)	ON	OFF	ON	When the room is lit by fluorescent lights (4200°K)
INDOOR SETTING (LIGHT 3)	ON	ON	OFF	When the room is lit by fluorescent lights (4700°K)
OUTDOOR SETTING	ON	ON	ON	Set for outside light (6500°K)

● Setting monitor synchronization (6) (AC 24V adaptor users)

Vertical sync disturbance may occur when a selector is used to switch between multiple cameras connected to one monitor.

To prevent vertical sync disturbance, adjust (6).

CAUTION

* When using the DC 12V adaptor, sync setting is set to internal sync.

* If MANUAL WHITE BALANCE is set, sync adjustment cannot be performed. Change to a different white balance setting.

● Adjusting level volume (7)

If the entire image is too dark or bright, or the backlight compensation is not correct even after (2) is set to "ON", you need to adjust the level volume.

CCW (Low)	Closes the lens iris, making the entire image darker
CW(High)	Opens the lens iris, making the entire image brighter

● Setting the electronic shutter speed (8)-(1)(2)(3)

The electronic shutter speed can be adjusted after setting "Shutter" for this setting(8)

ON	Changes the switch settings for (1),(2) and (3) to change the electronic shutter speed. At this time the actual Flickerless and Backlight Compensation are ignored.
OFF	Normal Setting

When the electronic shutter mode is set to "Shutter", a combination of the following three settings can be used to set up to eight speed levels.

Shutter speed	SW1 flickerless (1)	SW2 Backlight compensation (2)	SW3 Iris setting (3)
1/60	OFF	ON	OFF
1/100	ON	ON	OFF
1/250	OFF	OFF	OFF
1/500	ON	OFF	OFF
1/1000	OFF	ON	ON
1/2000	ON	ON	ON
1/4000	OFF	OFF	ON
1/10000	ON	OFF	ON