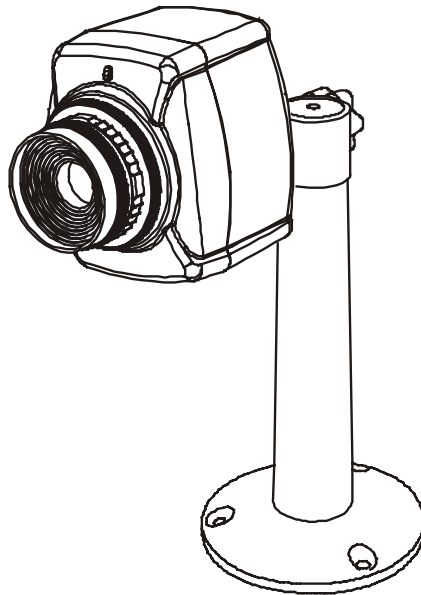


INSTRUCTION MANUAL

CCD CAMERAS

1/3" CCD BLACK & WHITE (A - C3BPS)

1/4" CCD COLOR DSP (A - C4CPS)



Please read this manual thoroughly before use, and keep it handy for future reference.

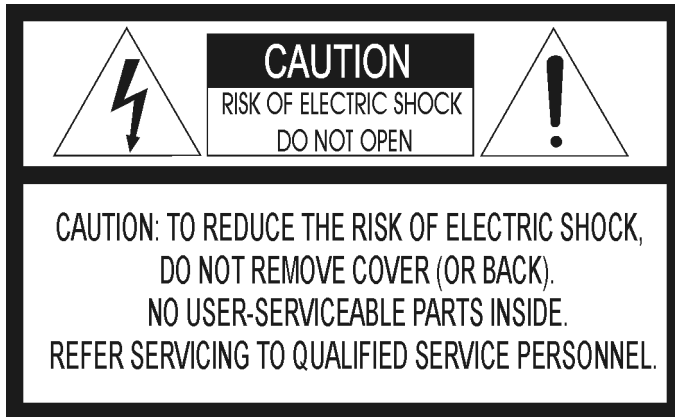
LIMITATION OF LIABILITY

THE INFORMATION IN THIS PUBLICATION IS BELIEVED TO BE ACCURATE IN ALL RESPECTS, HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR ANY CONSEQUENCES RESULTING FROM THE USE THEREOF. THE INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE. REVISIONS OR NEW EDITIONS TO THIS PUBLICATION MAY BE ISSUED TO INCORPORATE SUCH CHANGES.

WARNINGS AND CAUTIONS

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



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.



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 product.

FCC INFORMATION

1/3" CCD BLACK & WHITE CAMERA

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

1 /4" CCD COLOR CAMERA

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

CAUTION: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS B DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE B EST CONFORME À LA NORME NMB-003 DU CANADA.

IMPORTANT SAFEGUARDS

1. **READ AND RETAIN INSTRUCTIONS**
Read the instruction manual before operating the equipment. Retain the manual for future reference.
2. **CLEANING**
Turn the unit off and unplug from the power outlet before cleaning. Use a damp cloth for cleaning. Do not use harsh cleansers or aerosol cleaners.
3. **ATTACHMENTS**
Do not use attachments unless recommended by manufacturer as they may affect the functionality of the unit and result in the risk of fire, electric shock or injury.
4. **MOISTURE**
Do not use equipment near water or other liquids.
5. **ACCESSORIES**
Equipment should be installed in a safe, stable location. Any wall or shelf mounting accessory equipment should be installed using the manufacturer's instructions. Care should be used when moving heavy equipment. Quick stops, excessive force, and uneven surfaces may cause the equipment to fall causing serious injury to persons and objects.
6. **VENTILATION**
Openings in the equipment, if any, are provided for ventilation to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered.
7. **POWER SOURCES**
The equipment 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 at the installation location, contact your dealer. For equipment designed to operate from battery power, refer to the operating instructions.
8. **GROUNDING OR POLARIZATION**
Equipment that is powered through a polarized plug (a plug with one blade wider than the other) will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. Do not defeat the safety purpose of the polarized plug.

Alternate Warning: If the equipment is powered through a three-way grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. Do not defeat the safety purpose of the grounding-type plug. If your outlet does not have the grounding plug receptacle, contact your local electrician.
9. **CORD AND CABLE PROTECTION**
Route power cords and cables in a manner to protect them from damage by being walked on or pinched by items placed upon or against them.
10. **LIGHTNING**
For protection of the equipment during a lightning storm or when it is left unattended and unused for long periods of time, unplug the unit from the wall outlet. Disconnect any antennas or cable systems that may be connected to the equipment. This will prevent damage to the equipment due to lightning or power-line surges.
11. **OVERLOADING**
Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
12. **SERVICING**
Do not attempt to service the video monitor or equipment yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

13. **DAMAGE REQUIRING SERVICE**

Unplug the equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- A. When the power supply cord or the plug has been damaged.
- B. If liquid has spilled or objects have fallen into the unit.
- C. If the equipment has been exposed to water or other liquids.
- D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage to the unit.
- E. If the equipment has been dropped or the casing damaged.
- F. When the equipment exhibits a distinct change in performance.

14. **REPLACEMENT PARTS**

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

15. **SAFETY CHECK**

Upon completion of any service or repairs to the equipment, ask the service technician to perform safety checks to verify that the equipment is in proper operating condition.

16. **FIELD INSTALLATION**

The installation of equipment should be made by a qualified service person and should conform to all local codes.

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CCD CAMERAS

1/4" CCD COLOR

1/3" CCD BLACK & WHITE

INTRODUCTION

The color and B/W cameras in the plastic housing provide a low cost solution to closed circuit television surveillance applications in observation systems.

Features:

- B/W: 1/3" CCD
Color: 1/4" CCD DSP
- RJ11 connections for use with Observation monitoring systems
- Ceiling or wall mount installation
- Accessory input connects to two-way intercom, motion sensors, or alarm contacts
- Condenser microphone integrated in camera housing for audio monitoring
- Use alone for indoor applications
- Equipped with 4mm fixed lens (with optional 8mm lens)
- Supports standard CS lenses

INSTALLATION PRECAUTIONS

Install the camera in a suitable location such as a wall or ceiling that can support the weight of the camera and mount.

The camera should not be installed in a location where it is facing direct sunlight or exposed to very bright lights.

SYSTEM INSTALLATION

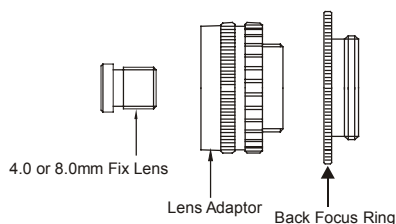
Installation of the camera must be performed by qualified service personnel in accordance with all local and national electrical and mechanical codes. Perform the following steps to install the camera.

1. Remove all components from the package and identify the items that will be used during installation.
 - Camera with fixed lens
 - Camera stand
 - Camera cable

Other items used during the installation that are NOT supplied with the camera may include:

- Observation monitor
- Additional mounting hardware

2. Select a suitable location for the camera. Install the camera stand or mounting bracket in the selected location using a suitable fastener.
3. The camera is equipped with a 4mm standard lens. An 8mm lens is also included with the camera. If a CS-mount lens is used, remove the lens adaptor (with the 4mm or 8mm lens intact) and attach the CS lens directly to the back focus ring.

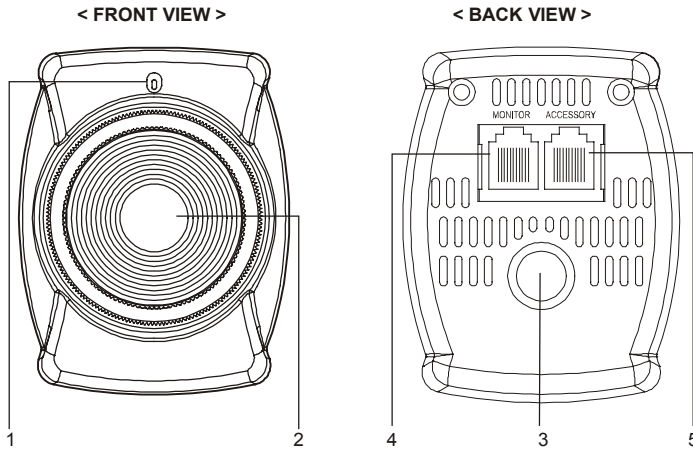


4. Attach the camera to the camera stand or mounting bracket using the hardware supplied with the stand. The hardware connects to the 1/4 " – 20 UNC threaded mounting hole on the back of the camera housing.

Note: The mounting bracket on the camera housing can be attached to the back of the housing to accommodate various installation options.

5. Route the video cable from the monitor to the camera.
6. Plug the cable into the connector port labeled "MONITOR" on the back of the camera.
7. Plug the other end of the cable into the corresponding camera connector port on the back of the monitor (CA1, CA2, etc.)
8. Adjust the lens focus for an optimum picture.

CAMERA OVERVIEW



1. **Microphone**

The microphone picks up sound at the camera location and transmits it back to the observation monitor.

2. **Wide Angle Lens**

The camera is equipped with a 4mm lens for monitoring of a wide area scene. An 8mm lens is also included with the camera.

3. Mounting Bracket Hole

The threaded holes (1/4" – 20) are used to mount the camera onto a mounting bracket or tripod.

4. Camera Port

The cable from the monitor plugs into the camera port.

5. Interphone Port

The interphone port is used to interface with additional accessories such as motion sensors, alarm contacts, and two-way intercoms.

FIXED LENS

The CCD camera is equipped with a standard 4mm fixed lens and includes an 8mm lens as an optional item. No iris adjustment is required.

MANUAL IRIS LENS ADJUSTMENT

This camera is equipped with a standard CS mount which enables the installer to replace the fixed lens with an optional manual iris lens.

When using a manual iris lens, turn the iris ring on the lens to the OPEN position and adjust the manual iris for the appropriate range. Adjust during the brightest conditions, opening the lens to the minimum f-stop yielding a good picture under the brightest scene conditions. Do not saturate the picture.

The manual iris is used in indoor applications where lighting from windows can considerably affect the light level of the room.

TROUBLESHOOTING AND MAINTENANCE

Troubleshooting

If problems occur, verify the installation of the camera with the instructions in this manual and with other operating equipment. Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

PROBLEM	AREA TO CHECK
No Video	<ol style="list-style-type: none">1. Verify power is applied to all pieces of the equipment in the system.2. Verify that the video cables are connected correctly.3. Verify that the lens cap has been removed from the lens and the iris of the lens is open.
Video but no control	Power down the system for one minute then re-apply power.

Preventive Maintenance

Preventive maintenance allows detection and correction of minor faults before they become serious and cause equipment failures.

Every three months perform the following maintenance:

1. Inspect all connecting cables for deterioration or other damage.
2. Clean components with a clean damp cloth.
3. Verify that all mounting hardware is secure.

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SPECIFICATIONS

	BLACK & WHITE	COLOR
<u>Power</u>		
Power source	15VDC	15VDC
Power consumption	2.5 Watts Max	2.5 Watts Max
<u>Camera Information</u>		
Image sensor	1/3" CCD (SHARP)	1 /4" CCD (SHARP)
Picture element	512(H) x 492(V) - EIA 512(H) x 582(V) - CCIR	512(H) x 492(V) - NTSC 512(H) x 582(V) - PAL
Unit cell size	9.6µm(H) x 7.5µm(V) - EIA 9.6µm(H) x 6.3µm(V) -CCIR	7.2µm(H) x 5.6µm(V) - NTSC 7.2µm(H) x 4.7µm(V) - PAL
Scanning system	2:1 interlace	2:1 interlace
Scanning frequency	15.734KHz, 59.94Hz (EIA) 15.625KHz, 50Hz (CCIR)	15.734KHz, 59.94Hz (NTSC) 15.625KHz, 50Hz (PAL)
Sync system	External	External
Electronic shutter	1/60(1/50) ~ 1/100,000sec	1/60(1/50) ~ 1/100,000sec
Audio output	600 ohms, line level 2-way communication (speaker inc1)	600 ohms, line level 2-way communication (speaker inc1)
<u>Video</u>		
Signal format	525 lines EIA 625 lines CCIR	525 lines NTSC 625 lines PAL
Resolution	380 lines	330 lines
Minimum illumination	0.1 lux (F1.2)	1.0 lux (F1.2)
Video output	1.0Vp-p, 75 ohms	1.0Vp-p, 75 ohms
S/N ratio	46dB (AGC OFF)	46dB (AGC OFF)
White balance	**	Auto
AGC	Internal, automatic	Internal, automatic
<u>Connectors & Mechanical</u>		
Video, power, audio	6-pin modular jack	6-pin modular jack
Accessory connector	6-pin modular jack	6-pin modular jack
Lens mount	CS mount	CS mount
Lens options	4 mm fixed (F3.8)	4 mm fixed (F2.0)
Mounting hole	1 / 4" - 20 UNC back of housing	1 / 4" - 20 UNC back of housing
Dimensions(WxHxD)	2.17" x 2.8" x 2.4" (55mm x 71mm x 62mm)	2.17" x 2.8" x 2.4" (55mm x 71mm x 62mm)
Weight	4.23 oz (120 g)	4.23 oz (120 g)

CCD CAMERAS

1/3" CCD BLACK & WHITE CAMERA (A - C3BPS)

1/4" CCD COLOR CAMERA (A - C4CPS)

50301842A

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Security



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