KJM

C70

Marine Grade Camera
Variable Focal with Day/Night capabilities

Installation and Operation Guide

KJM is dedicated to providing the finest in shipboard cameras and video equipment. Our high quality cameras are built to withstand the harsh marine environment, and are designed by people with over three decades of experience in the marine industry. KJM cameras provide crystal-clear images of whatever you need to monitor, from the engine room to the aft deck. Built to exacting standards from the finest materials, KJM products are rugged, available in a wide variety of styles and configurations, and will work with most marine monitors or Chart Plotters. No matter what your marine surveillance requirements, KJM has a product to meet your needs.

Please read the following pages before attempting installation to ensure complete understanding of the KJM C-70 camera.

Precautions

- To reduce the risk of electric shock, do not remove disassemble the ball camera as there are no user serviceable parts inside.
- This product must be installed by qualified service personnel or system installers.
- Do not operate beyond its specified temperature, humidity and power source ratings.
- Clean only with a dry cloth.

If you require additional support for the installation or use of this camera please contact us via email at info@kjm-holdings.com

FEATURES

- Stylish and designed from the ground up for demanding marine installations.
- Ideal onboard larger leisure yachts, commercial vessels and work boats alike.
- 48 Infra-Red LEDs for true day / night operation
- Variable lens (2.8-12mm) with zoom and focus adjustments
- On-Screen menu allows to customizing Normal or Reverse image, Day/Night and Picture Adjustments.

ACCESSORIES

| POW-5 | BNC-5 | COMB-25 | AMP1/4 |
| Five Meter Power Cable | Five Meter Video Cable | 25 Meter Video and Power Cable | Video Amp |

INSTALLATION

1. Ball tension screw
2. Mounting screw hole

Electrical Connections

1. **DC connection**
   - 2.1 mm power plug
   - +12VDC - current 800mA
   - Center pin + +12VDC
   - Body = Ground

2. **Video input**
   - BNC female
   - Input: 1vP~P, 75 Ω Composite video,
   - Center pin: Video positive, Body: Video ground

3. **Extension cable options**
   Contact your KJM dealer for the following accessories:
   - BNC-5 – Five foot Video extension cable
   - COMB-25 – 25 foot video and power extension cable

CAUTION: Be careful not to pinch video or camera cables during installation.

1. Mount the camera base by using the screw holes as guides. Drill two 3/32" (3mm) pilot holes for the mounting screws.
2. Drill one 3/4" (20mm) hole for the camera's cables if installation requires.
3. Route power and video cable from the monitor or chart plotter through the 3/4" (20mm).
4. Temporarily connect the camera cables and set the camera (refer to MENU Setup section).
5. After setup is complete, feed camera cables 3/4" (20mm) hole. If installation requires.
6. Loosen the two "ball tension screws and rotate the camera to the desired on the desired direction then tighten the screws.
7. Use a small flat screw driver to manually adjust the zoom and focus on the ball camera until the monitor or chart plotter shows the best picture.

MENU SETUP

Locate the Menu switch knob on the power/video cable of the camera. Press the switch knob in to show the MAIN MENU on the monitor or chart plotter's display.
To select the Setup Menu, press the Menu Knob.

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        ＜MAIN MENU＞

1.CAM NAME          OFF

2.LENS              DC IRIS

3. EXPOSURE

4.DAY/NIGHT         PWM

5.WDR/BLC/ECLPS     WDR

6.WHITE BAL         ATW

7.3D-DNR            ON

8.EFFECTS

9.SPECIAL

0.EXIT              RET
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Menu Knob Operation:

- Press the knob up / down keys to browse the main menu functions.
- Press in on the knob to enter a menu or sub-menu to edit it
- Press the knob to the Left or the Right to edit the selected menu item

1. **CAM NAME**

   Allows the user to name a camera which will be shown on the monitor or chart plotter.

   Examples: Aft Deck, Engine Room

2. **LENS**
   a. DC (Direct Control) IRIS / BRIGHTNESS – manual brightness control
      Adjustable from 0 to 100, default 50
   b. REACTION SPEED: 0 to 8

3. **EXPOSURE**

   a. AGC - automatically adjusts the video signal to compensate for varying levels illumination.
      Selections: OFF, LOW, MIDDLE, HIGH
   b. SHUTTER - Used to reduce blur when capturing fast moving objects, and for camera sensitivity reduction in high levels of scene illumination.

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Selections: AUTO, OFF, A.FLK, 1/160, 1/250, 1/500, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000, 1/50000, 1/90000, (X512, X256, X128, X64, X32, X24, X16, X14, X12, X10, X8, X6, X5, X4, X3, X2 slow shutter speeds)

    c. SENS-UP – Increases the low LUX performance, by recalculating the brightness level of each pixel
Settings: OFF, AUTO X2, AUTO X3, AUTO X4, AUTO X5, AUTO X6, AUTO X8, AUTO X10, AUTO X12, AUTO X14, AUTO X16, AUTO X32, AUTO X64, AUTO X128, AUTO X256, AUTO X512

4. DAY / NIGHT
    a. IR-CDS LEVEL – selects the point sensitivity point where the camera switches from day to night modes
Selections: LOW, MIDDLE, HIGH.
    c. FILTER DLY – delay setting when the image switches from daylight color to night time black and white modes.
Selections: 1 SEC, SEC, 5 SEC, 10 SEC, 15 SEC, 30 SEC, 60 SEC.

5. WDR / BLC / ECLPSE

    a. WDR LEVEL (Wide Dynamic Range) - Function to acquire natural images with fewer blown out highlights and shadows by combining a multiple number of images, shot at different exposure times, using digital signal processing
Selections: WDR, BLC, ECLIPS and OFF
- WDR LEVEL: LOW, MIDDLE, HIGH and SUPER
- BLC LEVEL: LOW, MIDDLE and HIGH
- ECLPSE - This menu is used to fine tuning suppression for bright lights or glare, while improving the brightness of the shaded areas. This setting is ideal customizing the display for monitoring brightly lit areas
  - a. AREA SETTING (block set): A total of 16 areas set according to the actual environment needs modified.
  - b. ALL AREA SET (region set): ON, OFF.
  - c. MASK COLOR (blocks of color): BLACK, D. GRAY and GRAY
  - d. ECLPS LEVEL (the light inhibition sensitivity): 1 to 5.
  - e. GAIN CONTROL: ON, OFF
- OFF

6. WHITE BAL
ATW (Automatic Tracking White Balance) - White balance settings are automatically adjusted depending on the color temperature of the object in the camera and can be adjusted manually.

    a. ATW - The ATW automatic tracks white balance and automatically adjusted in accordance with the existing environment color.
    b. PUSH
    c. MANUAL – Normally not used. Allows manual selection of Color Temp, Red and Blue for best picture where there may be different lighting sources)
Selection: -100 to 100.
    d. COL-ROLL

7. 3D-DNR (Dynamic Noise Reduction)
This menu item is used to reduce noise from external sources found on vessels.
    a. DNR LEVEL (sensitivity):
Selections: 0 to 63. Note: if adjusted to higher values may take additional time for the camera to react to changes in the field of view.
    b. DESTINATION:
Selections: 0 to 63.
    c. GLOBAL MOVEMENT: ON, OFF

8. **EFFECTS** (Additional settings function)
   a. DZOOM Mode – Allows the camera to digitally zoom into a area
      Selection:
      - DZOOM PAN - Allows the camera image to be moved to the left or the right
        Selection: -100 to 100
      - DZOOM TILT- Allows the camera image to be moved up or down
        Selection: -100 to 100
   b. IMAGE FREEZE – Menu selection to freeze the cameras image
      Selection: ON/OFF
   c. D-EFFECT
      - OFF
      - ROTATE: Normal view
      - V-FLIP: Menu selection to vertically flip the image
      - MIRROR: Menu selection to reverse flip the image (reverse image)
   d. CONTRAST – Adjusts the color contrast ratio
      Selection: 0-100
   e. SHARPNESS - Increase the differences the imaging between the edges of the pixels. A lot of sharpness is good for subjects that are perceive as hard edged --such as the edge of a building against a sky; and less sharpening is wanted for subjects we perceive as smooth like a wall
   f. Selection: 0-100
   g. COLOR ADJUST – Turns color adjust mode on or off.
      Selection: ON/OFF
      - COLOR HUE: +/- 100
      - RED GAIN: +/- 100
      - BLUE GAIN: +/- 100
   h. SPECIALS
      ITS MODE: ON/OFF
      MOTION DETECT: ON/OFF
      PRIVIACY MASK: ON/OFF
      LANGUAGE: ENGLISH, FRENCH, SPANISH, RUSSIAN AND CHINESE
      STABILIZER: ON/OFF
      L/L SNYC: FIXED INTERNAL
      MONITOR TYPE: CRT, LIN and LCD
      FACTORY RESET: Resets all menu items to original factory settings
      COMM SET: Not used

SPECIFICATIONS

General

Image Pick-up Device	1/3 SONY EFFIO DSP CCD
Variable focal Length	2.8–12mm
Effective Picture Elements	NTSC: 811 (H) x 508 (V)
Horizontal Resolution	Color : 650TVL / Black and White 700TVL (Intelligent IR On)
	Hybrid WDR: Color 650TVL / Black and White 700TVL (Intelligent IR On)
S/N Ratio	More than 48dB
Synchronous System	Internal, negative sync
Auto Gain Control	Auto
NTSC Information	Clock: 28.636 MHz Auto Shutter: 1/60s~1/100.000s
Reverse video	Yes, selected in Setup Menu
Lens and focus	Controlled by user 2 independent adjustments on camera ball
1. IR LEDs details	48pcs - Up to 30 meters visibility in pitch black conditions 1. IR Status: Under 10 Lux by CDS (CDS is a light sensor used to switch from night to daylight modes) IR power on: CDS AUTO Control ,
Minimum Illumination	0 Lux (IR ON)

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Electrical

DC Connection	2.1mm female plug 12VDC @ 800mA
Video Connection	BNC Female 1V p-p output

Physical

Size	5.5" Diameter base (139mm) x 3.4"H (85mm)
Weight	2.3LBS (1000 g)

Environmental

Water Resistance	IP66
Storage Temperature	-30 to +60°C Relative humidity 95% Max
Operating Temperature	-10 to +50°C Relative humidity 95% Max

FCC STATEMENT

NOTE: 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 users will be required to correct the interference at their own expense.

FCC CAUTION: To assure continued compliance, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

WARNING- This product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

LIMITATION OF LIABILITY

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- Any damage or loss, including but without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product.
- Personal injury or any damage caused by inappropriate use or neglect of the user.
- Unauthorized disassembly, repair or modification of the product by the user.
- Any problem, consequential inconvenience, or loss or damage, arising out of the system combined with the devices of the third party.
- Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the results of the camera's picture, including save3d data, for some reason, becomes public or is used for the purpose other than surveillance.