

Operating Instructions

1/4" Day&Night Autofocus Camera



VKC-1416C



WARNING 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 OBJECT THROUGH VENTILATION GRILLS.

CAUTION

| | | |
|---|---|---|
|  | CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN |  |
| WARNING : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER(OR BACK). NO USER-SERVICABLE PARTS INSIDE. REFER servicing TO QUALIFIED SERVICE PERSONNEL. | | |

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) instructions in the literature accompanying the product.

PRECAUTIONS

Safety

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.

Unplug the unit from the wall outlet if it is not going to be used for several days or more.

To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on soft surfaces (rugs, carpets, sofas, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

Height and vertical linearity controls located on the rear panel are for special adjustments by qualified personnel only.

Installation

Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust, mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

Cleaning

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

Retain the original carton and packing materials for safe transport of this unit in the future.

FCC COMPLIANCE STATEMENT

INFORMATION TO THE USER: 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 HIS OWN EXPENSE.

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

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

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

CE COMPLIANCE STATEMENT

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFEGUARDS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug.
A polarized plug has two blades with one wider than the other.
A grounding type plug has two blades and a third grounding prong.
The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been moisture, does not operate normally, or has been dropped.
15. **CAUTION THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU QRE QUALIFIED TO DO SO.**
16. **Use Certified/Listed Class 2 power source only.**

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1. INTRODUCTION

The 22x Auto Focus Zoom WDR Day & Night Camera provides especially for closed circuit television (CCTV) and security surveillance application.

1.1 THE CAMERA FEATURES

- SONY 1/4" 960H Super HAD CCD II (700 TV Lines)
- 352x zooming capability (Optical : 22x / Digital : 16x)
- 0.1 lux (Color), 0.01 lux (B/W), 0.00001 lux(slow shutter)
- Excellent picture quality
- Various picture effects
- Support camera control available RS-485
- power operation DC 12V

CAUTION : Use Certified/Listed Class 2 power source only.

Use at the 12VDC Adapter must provide the power consumption of above 500MA.

- Function :
 - D/N (Day / Night)
 - DSS (Digital Slow Shutter)
 - DIS(Digital Image stabilizer)
 - WDR (Wide Dynamic Range)
 - DNR (Digital Noise Reduction)
 - M/D (Motion Detection)
 - AWB (Auto White Balance)
 - AE (Auto Exposure)
 - AGC (Auto Gain Control)
 - BLC (Back Light Compensation)
 - OSD (On Screen Display)
 - ZOOM PRESET & TOUR
 - P/M(Privacy Mask)
 - ALARM(Alarm out)



IMPORTANT : The user of this camera is responsible for checking and complying with local, state, and federal laws and statutes concerning the recording and monitoring of audio signals.

2. SYSTEM INSTALLATION

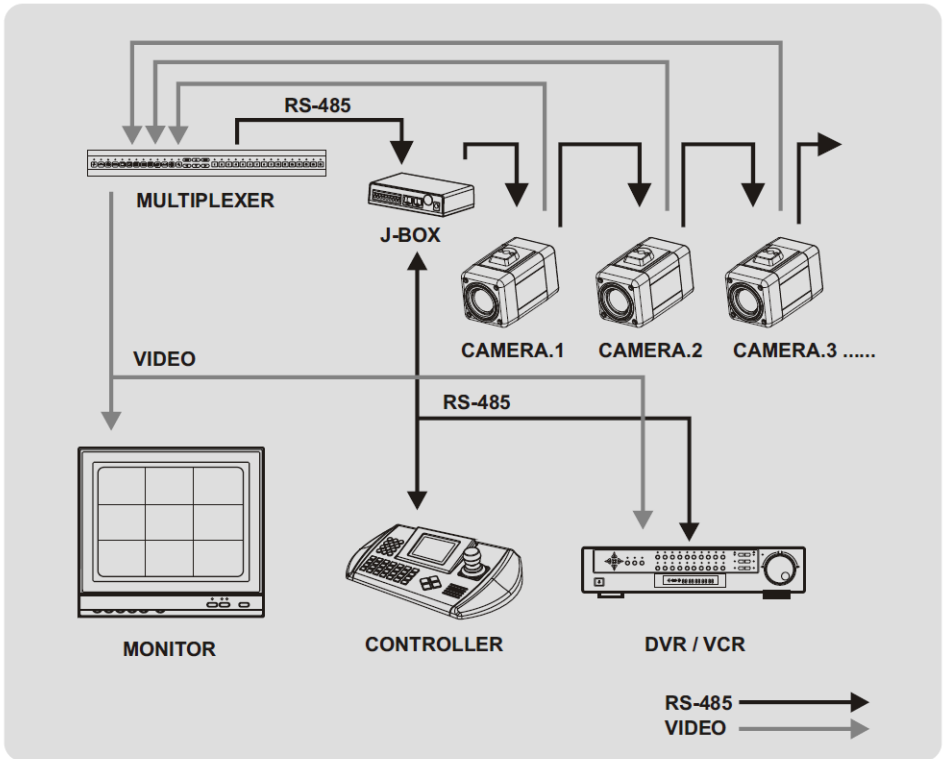
Installation of the camera must be performed by qualified service personnel in accordance with all local national electrical and mechanical codes must perform installation of the camera.

Perform the following steps to install the camera.

2.1 PACKAGE CONTENTS

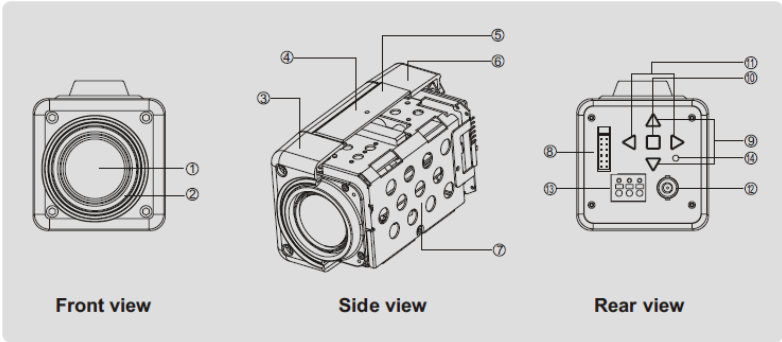
- Camera - 1EA
- Instruction Manual (This document) - 1EA
- 12 pin Interface Cable – 1EA
- Camera Mounting Bracket (option)
- A/D Remote Controller (option)

2.2 OPERATION REQUIREMENTS



< Typical System Configuration >

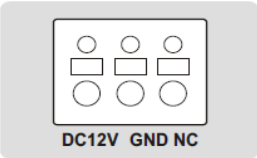
3. Parts Name & Function



- ① **Day & Night Zoom Lens**
Integrated lens with 22x optical and 16x digital zoom.
- ② **Filter mount**
Accepts commonly used filters with 37mm diameter.
- ③ **Front Case**
- ④ **Mounting Adapter**
Is used to mount the camera onto a bracket.
- ⑤ **Case Body**
- ⑥ **Rear Case**
- ⑦ **Camera Module**
- ⑧ **Connector for control interface**
12pin connector

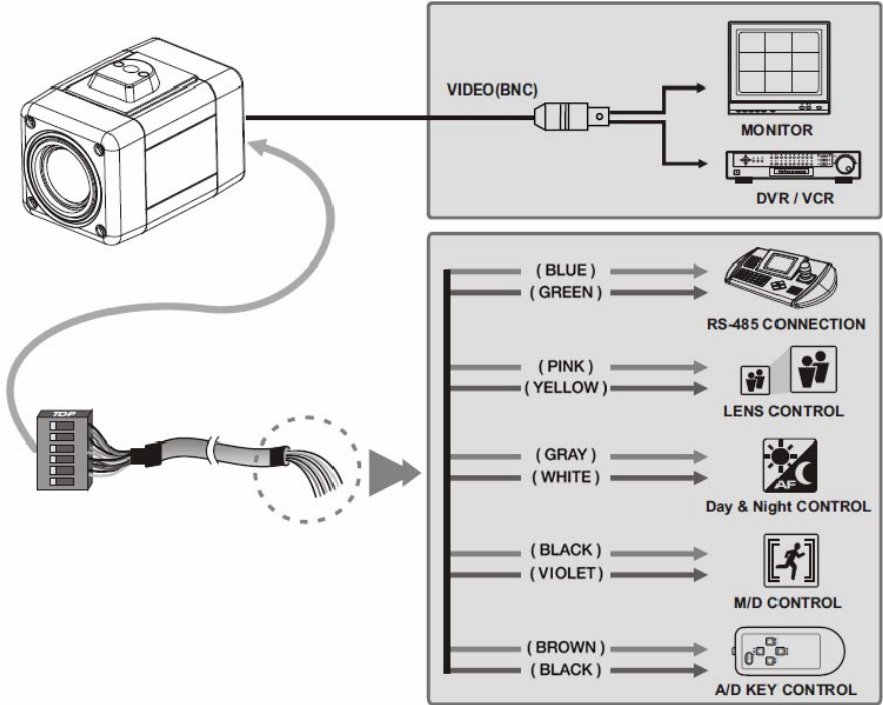
| PIN | Description | Description | PIN |
|---------|----------------------|--------------------|---------|
| 485- | RS-485(-) | RS-485(+) | 485+ |
| TX | RS-232 TXD IN | RS-232 RXD IN | RX |
| EXT-OUT | External Out | Ground | GND |
| EXT-IN | External In | A/D KEY | A/D KEY |
| M/D OUT | Motion Detection OUT | Far (-), Near (+) | FOCUS |
| COM | Common | Tele (-), Wide (+) | ZOOM |

- ⑨ **TELE, WIDE Button**
Zoom control: Push "WIDE" for wide angel views and "TELE" to zoom in.
- ⑩ **MENU Button**
Menu functions in the OSD display can be controlled when the OSD menu is activated.
- ⑪ **NEAR, FAR Button**
Press the "NEAR" side to focus on near objects and the "FAR" side to focus on far objects. Focus buttons are activated when AF off mode.
- ⑫ **BNC connector**
It connects the camera and the monitor or etc.
- ⑬ **Power input terminal**
Receives DC12V from the power supply.
- ⑭ **Power Indicator**
Is lit when the power is supplied.



4. CONNECTION

CAUTION : Do not connect the power cable until all other connections have been completed. If you complete the whole connection of cameras, then you have to cut the extra cable.



4.1 COLOR LEAD WIRE & COLOR DISPLAY LABEL

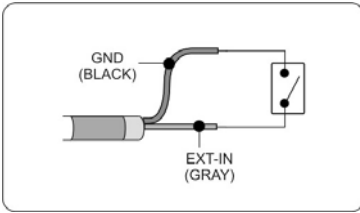
<12pin Cable>

Connection Cable Description

| COLOR | DESCRIPTION |
|----------|-------------|
| PINK | ZOOM |
| RED | COMMON |
| YELLOW | FOCUS |
| VIOLET | M/D OUT |
| BROWN | A/D KEY |
| BLUE | RS-485(-) |
| GREEN | RS-485(+) |
| SKY-BLUE | RS-232 TXD |
| ORANGE | RS-232 RXD |
| BLACK | GND |
| WHITE | EXT-OUT |
| GRAY | EXT-IN |

4.2 EXTERNAL INPUT

It connect to an external sensor to receive day/night detection signals.



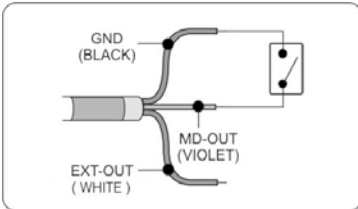
ALARM/MD -> EXT

- EXT-IN - OPEN : COLOR / ALARM OFF
- CLOSED : B/W / ALARM ON

*Note: The above two settings can be selected at the same time.

4.3 EXTERNAL OUTPUT

The EXT-OUT lead and MD-OUT lead output voltage is different according to D/N and MD settings. Please refer to below in detail.



1. EXT-OUT output voltage

The EXT-OUT lead output voltage for COLOR and B/W is as following.

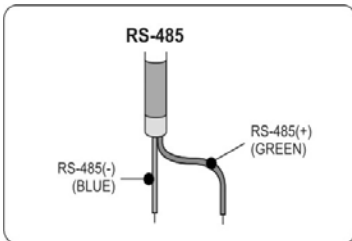
- EXT-OUT - COLOR : 0V
- B/W : 5V

2. MD-OUT output voltage

The MD-OUT lead output voltage is as following in case MD event occurs when 'ALARM/MD MENU' -> 'MODE' is set to MD, MD+EXT

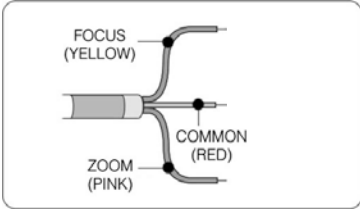
- MD-OUT - MD OFF : 0V
- MD ON : 3.3V

4.4 RS-485 CONNECTION



Connecting to the RS-485 : The Camera can be controlled remotely by an external device or control system, such as a control keyboard, using RS-485 half-duplex. Connect Market Rx+, Rx- to Tx+ and Tx- of the RS-485 control system.

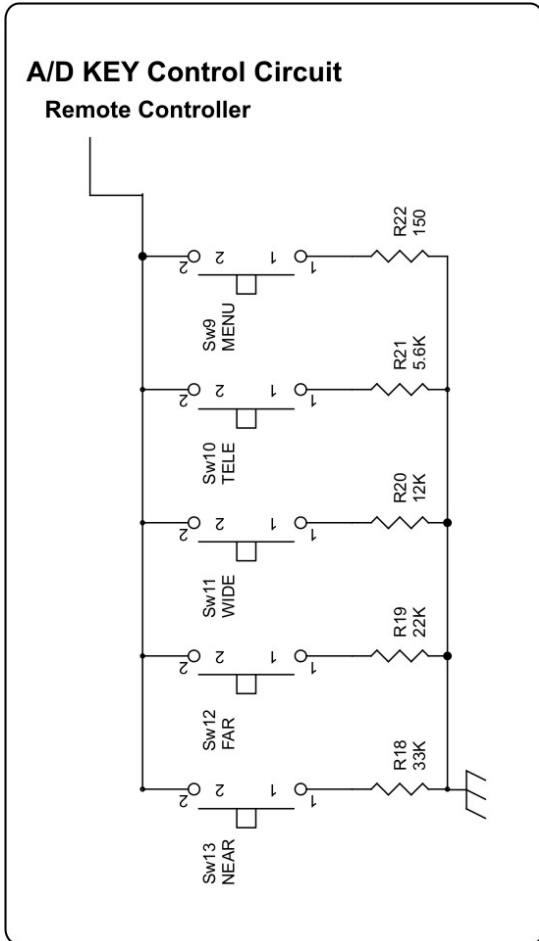
4.5 EXTERNAL LENS CONTROL



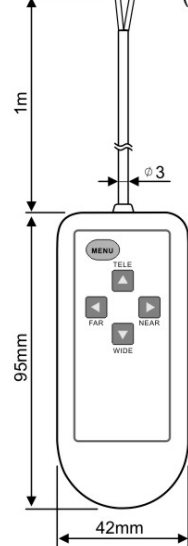
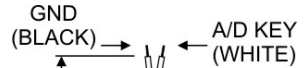
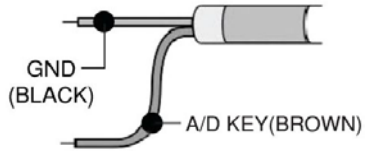
- FOCUS**
 - NEAR(+) : External Power DC ±3V to ±12V (YELLOW)
 - : GND (RED)
 - FAR(-) : GND (YELLOW)
 - : External Power DC ±3V to ±12V BNC (RED)
- ZOOM**
 - TELE(+) : External DC ±3V to ±12V (PINK)
 - : GND (RED)
 - WIDE(-) : GND (PINK)
 - : External DC ±3V to ±12V (RED)

4.6 EXTERNAL A/D KEY CONTROL

External Controller Circuit Schematic



A/D KEY

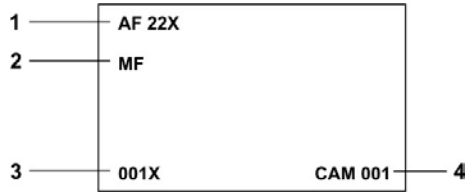


Remote Controller

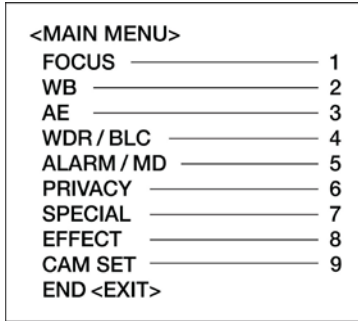
5. CAMERA ADJUSTMENT

5.1 OSD MAIN SCREEN

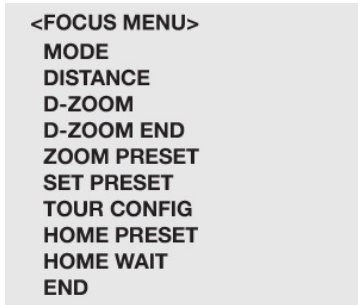
1. Camera title
2. Status of the focus mode
3. Status of the zoom position
4. Camera ID



5.2 MAIN MENU



5.2.1 FOCUS



- MODE** Select auto, manual, push auto mode.
- DISTANCE** Select minimum distance in focus between camera and object. (0.1/1.0/1.5/2.5/6m)
- D-ZOOM** Digital Zoom on/off.
- D-ZOOM END** Select maximum Digital Zoom magnification. (x2, x3, x4, x6, x8, x12, x16)
- ZOOM PRESET** Select zoom preset number, Default is x1. (1~10)
- SET PRESET** Set the zoom position of zoom preset.
- TOUR CONFIG** Select zoom tour mode. (10 zoom preset to 1 tour mode)
- HOME PRESET** To move the zoom position to the selected preset number when idle state(Decisions by HOME WAIT time).
- HOME WAIT** Select the duration time to activate the HOME PRESET.

NOTE 1 : When "ZOOM PRESET" is selected, you can adjust the preset zoom location using the "tele" and "wide" buttons.

NOTE 2 : When after the zoom location has been selected press the "menu" button to store the location.

5.2.2 WB (White Balance)

```
<WB MENU>
MODE
R GAIN
B GAIN
FEAME ADJ
END
```

- MODE** Select white balance mode.
(AWB/WAWB/INDOOR/OUTDOOR/MANUAL/CRS)
- AWB Auto white balance mode. (2500~9500'K)
 - WAWB Wide range auto white balance mode. (1800~10500'K)
 - INDOOR Indoor white balance mode.
 - OUTDOOR Outdoor white balance mode.
 - MANUAL Manual mode. You can change R and B Gain manually.
 - CRS Color rolling suppression mode.
- R GAIN** Adjust R gain value. (0~255)
- B GAIN** Adjust B gain value. (0~255)
- FRAME ADJ** Since the color rolling path differs depending on the fluorescent lamp used, adjust the color rolling frame for each fluorescent lamp. So press Menu key to adjust frame and after about 10 seconds, the adjust mode will be finished automatically and 'ENT' turns to 'END'.

5.2.3 AE (Auto Exposure)

```
<AE MENU>
MODE
SHUTTER
GAIN
DSS
MAX DSS
FLICKERLESS
BRIGHTNESS
IRIS SPEED
END
```

- MODE** Select Exposure mode. (AUTO1/AUTO2/SHUT PRI/MANUAL)
- AUTO1 Auto exposure mode 1. (Use to normal surroundings : indoor)

| | |
|--------------------|--|
| -AUTO2 | Auto exposure mode 2. (Use to high brightness surroundings : outdoor) |
| -SHUT PRI | Shutter priority exposure mode. |
| -MANUAL | Manual exposure mode. |
| SHUTTER | Select shutter speed. (1/60(50)~1/100K) Can be changed while in SHUT PRI and Manual mode. |
| GAIN | Gain control. (0~30DB) |
| DSS | Digital slow shutter on/off |
| MAX DSS | Select maximum slow shutter value. (x2~x512) |
| FLICKERLESS | Flickerless on/off |
| BRIGHTNESS | Adjust brightness level. (0~50) |
| IRIS SPEED | Sets the convergence speed of the mechanical iris (0~20) |

5.2.4 BLC/WDR

```

<WDR / BLC MENU>
WDR      MODE
          LEVEL
BLC      MODE
          AREA
          LEVEL
END

```

| | | |
|------------|--------------|--|
| WDR | MODE | Wide dynamic range on/off. |
| | LEVEL | Adjust WDR level. (LOW/MIDLOW/MID/MIDHIGH/HIGH) |
| BLC | MODE | Select backlight compensation mode. (OFF/HLC/BLC/BLC-M) |
| | AREA | Select BLC area position. (1~9) |
| | LEVEL | Select BLC level. (LOW/MID/HIGH) |

5.2.5 ALARM/MD

```

<ALARM / MD / MENU>
MODE
AREA SEL

---
DEFAULT
ADJ TOP / LEFT
ADJ BOT / RIGHT
SENSITIVITY
DWELL TIME
ALARM MODE
PRESET SEL
END

```

| | |
|----------------------|--|
| MODE | Select alarm and MD/EXT mode. (OFF/MD/EXT/ MD+EXT) |
| AREA SEL | Select MD area number. (1~4) Select MD enable/disable. |
| DEFAULT | Set MD area as default. |
| ADJ TOP/LEFT | Adjust the location of the MD area with boundary top and left. |
| ADJ BOT/RIGHT | Adjust the location of the MD area with boundary bottom and right. |
| SENSITIVITY | Adjust sensitivity of MD area. (MD:1~10) |
| DWELL TIME | Dwell time setup of zoom preset. (10,20,...,180sec) |
| ALARM MODE | One of two options can be selected for EXT mode. BW/PRESET. |
| PRESET SEL | Select zoom preset number. (OFF,1~10) (When the MD and/or Alarm is/are occurred.) |

5.2.6 PRIVACY

```

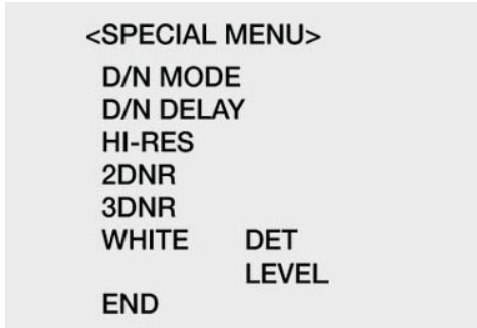
<PRIVACY MENU>
MASK SEL
  ---
  DEFAULT
  ADJ TOP/LEFT
  ADJ BOT/RIGHT
  COLOR
  MOSAIC
  MOSAIC TYPE
  END

```

| | |
|----------------------|--|
| MASK SEL | Select mask area number. (1~16) Select mask enable/disable. |
| DEFAULT | Set mask area as default. |
| ADJ TOP/LEFT | Adjust the location of the mask area with boundary top and left. |
| ADJ BOT/RIGHT | Adjust the location of the mask area with boundary bottom and right. |
| COLOR | Select mask color. (1~8) |
| MOSAIC | Mosaic display on/off. |
| MOSAIC TYPE | Mosaic roughness setting. (1 ~ 4) |

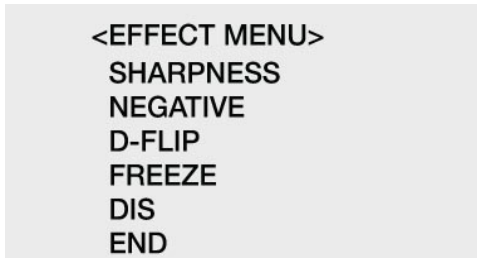
NOTE1 : The mosaic when the color is transparent, is possible

5.2.7 SPECIAL



- D/N MODE** Select D/N, Color, BW.
- D/N DELAY** Adjust the working time of the filter when D/N operated.
(5,10,20 sec)
- HI-RES** Select high resolution mode. (LOW/MID/HIGH)
- 2DNR** Select 2D noise reduction level. (OFF/01~07)
- 3DNR** Select 3D noise reduction level. (AUTO/01~28)
AUTO : If the motion is detected, DNR level becomes lower automatically so "ghost" is decreased, on the other hand, noise will be increased. On the opposite, if there is no motion, DNR level is raised and noise will be decreased.
- WHITE DET** Press the Menu key to execute the White Pixel Detection function and then the Iris will be closed automatically. When detection is completed, the operation automatically returns to the normal state.
- LEVEL** Adjust the threshold level from 1 to 15. (Default is 4)

5.2.8 EFFECT



- SHARPNESS** Adjust sharpness of outline. (0~15)
- NEGATIVE** Select the negative or positive mode.
- D-FLIP** Select rotate or flip mode. (OFF/V FLIP/H FLIP/ROTATE)
- FREEZE** Select the real or still mode.
- DIS** Select On or Off the DIS mode. (Digital Image Stabilizer)

5.2.9 CAM SET



- CAM ID** Select the camera ID. (1~255)
- BAUD RATE** Select serial communication speed. (2400/4800/9600/19200bps)
- PROTOCOL** Select operating protocol.
(FASTRAX/PELCO-P/PELCO-D/COMMAND)
- DISP MODE** Select display mode. (ON//PUSH ON/OFF)
- DISP ITEM** Select display item. (1~2)
 - 1 Camera Title and ID display.
 - 2 Camera Title and ID, Zoom lens position display.
- TITLE** Select camera title menu. (A~Z, 0~9)



- ALARM TEXT** If the alarm is occurred, the ALARM TEXT established at this menu will be displayed.
- SAVE** Save preset parameters of CAM SET MENU.

- NOTE 1 :** You can choose BPS menu appropriate for keyboard protocol.
- NOTE 2 :** Although you change BAUD RATE or PROTOCOL menu, the terms of change is not applied unless you select SAVE menu.
- NOTE 3 :** Do not power source down while saving

6. TROUBLESHOOTING AND MAINTENANCE

6.1 TROUBLESHOOTING

If problems occur, verify the installation of the camera with the instruction 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 | POSSIBLE SOLUTION |
|---|---|
| Nothing appears on the screen | Are the power cord and line connection between the camera and monitor made properly? |
| The image on the screen is dim. | Is the lens dirty? If so, clean the lens with a soft, clean cloth. |
| The camera is not working properly and the surface of the camera case is hot. | Is the camera connected to the proper power? |
| The contrast on the screen is too weak. | Adjust the contrast feature of the monitor. Is the camera exposed to strong light? If so, change the camera position. |

6.2 MAINTENANCE

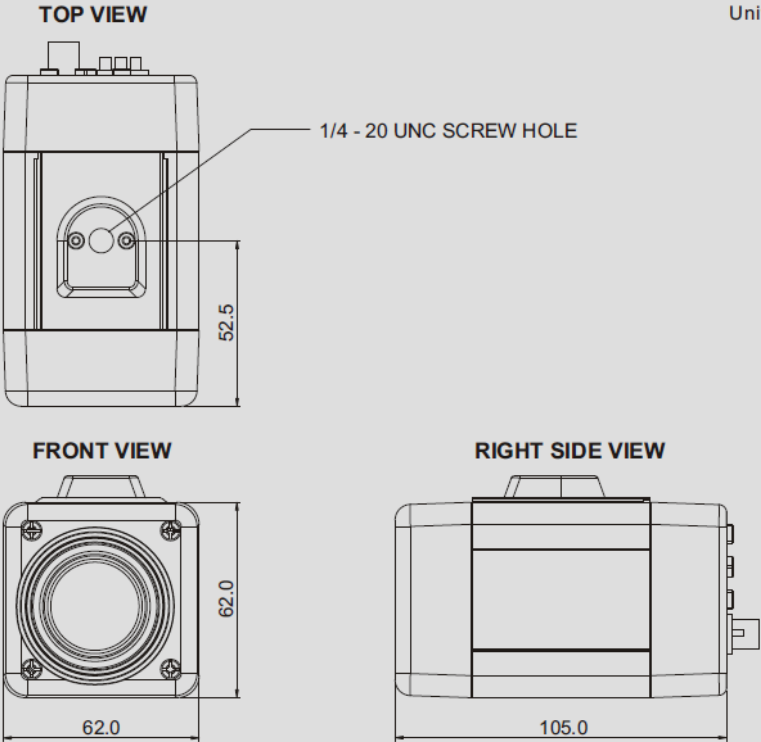
Preventive maintenance allows detection and correction of minor faults before they become serious and cause equipment failure.

Every three-month, perform the following maintenance.

- A. Inspect all connection cables for deterioration or other damage.
- B. Clean components with a clean damp cloth.
- C. Verify that all the mounting hardware is secure.

7. DIMENSIONS

Unit: mm



8. SPECIFICATIONS

| MODEL | | NTSC | PAL | | |
|-------------|-------------------|---|------------------|--|-----------------------|
| POWER | Power Source | DC 12V ±10% | | | |
| | Power Consumption | 0.3A(4W) | | | |
| GENERAL | FUNCTION | Image Sensor | | | |
| | | 1/4" 960H Super HAD CCD II | | | |
| | | Total Pixels | 1028(H) * 508(V) | 1028(H) * 596(V) | |
| | | Scanning System | | 2:1 interlace | |
| | | Scanning Frequency | | 15.734KHz(H), 59.94Hz(V) | 15.625KHz(H), 50Hz(V) |
| | | Sync. System | | Internal | |
| | | Resolution | | 700 TV lines | |
| | | Min. illumination | | 0. lux (Color), 0.01 lux (BW), 0.00001 lux (Low-shutter) | |
| | | Video Output | | 1.0 Vp-p (75 ohm, composite) | |
| | | S/N Ratio | | 50dB (AGC OFF) | |
| | | WDR (Wide Dynamic Range) | | Off / On | |
| | | BLC (Back Light Compensation) | | Off / HLC / BLC / BLC-M(BLC Manual) | |
| | | Day & Night | | Auto / Color / BW | |
| | | ALARM / MD (Motion Detection) | | Off / MD / EXT / MD+EXT | |
| | | DIS(Digital Image stabilizer) | | On/Off | |
| | | DSS (Digital Slow Shutter) | | x2 ~ x512 | |
| | | DNR (Digital Noise Reduction) | | 2D / 3D | |
| | | PM (Privacy Masking) | | 1 ~ 16 zone | |
| | | AWB (Auto White Balance) | | AWB / WAWB / Indoor / Outdoor / Manual / CRS | |
| | | AE (Auto Exposure) | | Auto1 / Auto2 / Shutter PRI / Manual | |
| | | Iris Control | | Auto | |
| | | AGC (Auto Gain Control) | | MIN / LOW / MID / HIGH (30dB max.) | |
| | | Shutter Speed | | Normal ~ 1/100,000 | |
| | | Title | | A ~ Z / 0 ~ 9 | |
| | | Display | | On / PushOn / Off | |
| | | Brightness | | 10 ~ 50 steps | |
| | | Sharpness | | 0 ~ 15 steps | |
| | | Zoom Preset | | Preset 1 ~ 10 | |
| | | Zoom Tour | | Tour 1 | |
| | | Camera Control | | RS-232 / RS-485(FASTRAX / Pelco P, D / COMMAND) / ADKey | |
| | | BPS | | 2400 / 4800 / 9600 / 19200 | |
| | | Camera ID | | 001 ~ 255 | |
| D-FLIP | | Off / V- FLIP / H- FLIP / ROTATE | | | |
| Effect | | Sharpness, Nega/Posi, D-FLIP, Freeze, DIS HI-RES, 2-3DNR | | | |
| Home Preset | | Off / Home Preset Select / Dwell Time | | | |

| | | | |
|--|-----------------------|--------------------------|---|
| G E N E R A L | L E N S | Focus Mode | Auto / Manual / Push AF |
| | | Distance | 0.1M / 1.0M / 1.5M / 2.5M / 6.0M |
| | | Zoom Ratio | Optical x22, Digital x16 Zoom (Video AF) |
| | | Focus Length | f = 3.9 mm ~ 85.8 mm |
| | | Aperture Ratio | F1.6 (wide) ~ F3.7 (tele) |
| | | Angle of View | Horizontal : 49.5 degree (wide) / 2.4 degree (tele) |
| C O N N E C T O R & E T C. | Power Input | 3-pin terminal block | |
| | Video Output | BNC connector | |
| | Operating Temperature | -10°C ~ +50°C | |
| | Operating Humidity | 0 ~ 96% (non-condensing) | |
| | Storage Temperature | -20°C ~ +60°C | |
| | External Dimension | 62(W) x62(H) x 105(D) mm | |
| | Weight | 220 g | |



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