

WIDE DYNAMIC RANGE CAMERA

U S E R M A N U A L

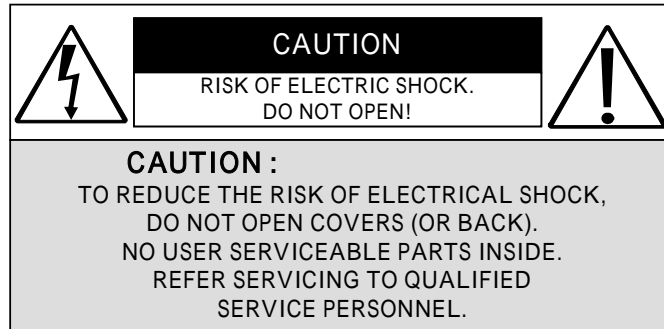


Contents

1. SAFETY PRECAUTIONS.....	2
2. INTRODUCTION	3
3. FEATURES	4
4. PACKING LIST	5
5. NAME and FUNCTION of EACH PART	6
6. INSTALLATION	8
6.1 Native Keyboard Installation.....	9
6.2 PELCO Keyboard (or compatible) Installation.....	9
7. OPERATION.....	10
7.1 Operating Procedure.....	10
7.2 Native Keyboard Operation.....	10
7.3 PELCO Keyboard (or compatible) Operation.....	11
8. SYSTEM SETUP	12
8.1 Digital Zoom Operation:	12
8.2 OSD (On Screen Display) Main Menu Description.....	12
9. CAMERA CONTROL PROTOCOL	19
10. SPECIFICATION	22

The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information herein.

1. SAFETY PRECAUTIONS



It is advised to read the Safety Precaution Guide through carefully before operating the product, to prevent any possible danger.



WARNING: Alert the user to the presence of un-insulated “dangerous voltage”.



CAUTION: Alert the user the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance.



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office , your household waste disposal service or the shop where you purchased the product.

Please be extra careful not to shake the product.

Please avoid places where frequent vibrations or shocks.

Do not install the product in extreme temperature conditions.

Only use the camera under conditions where temperatures are between -10 and +50 . Be especially careful to provide ventilation when operating under high temperatures.

Do not install the product in an environment where the humidity is high.

Unless the product is waterproof or weatherproof, otherwise it can cause the image quality to be poor.

Never keep the product to direct strong light or sunlight.

It can damage the product.

Do not spill liquid of any kind on the product.

If it gets wet, wipe it dry immediately. Alcohol or beverage can contain minerals that corrode the electronic components.

When any abnormal occurs, make sure to unplug the unit, and contact your local dealer.

2. INTRODUCTION

This WDR digital image camera uses a high sensitive color 1/3" interline transfer Charge Coupled Device (CCD) image sensor, featuring approx.: NTSC = 380,000/ PAL = 440,000 effective pixels, producing pictures reaching 470 lines of horizontal resolution. Wide-dynamic range function, the ability to respond quickly and accurately to scenes or objects with high contrast and wide variations in light. Built-in with ICR module and DSS function provides excellent low lux effect. Remote control is available via RS-485/ RS-422 or RS-232 (optional) interface.

3. FEATURES


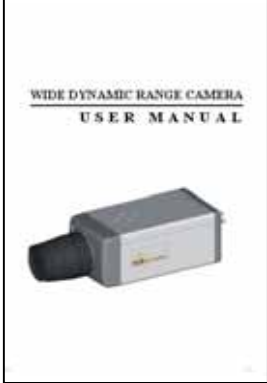
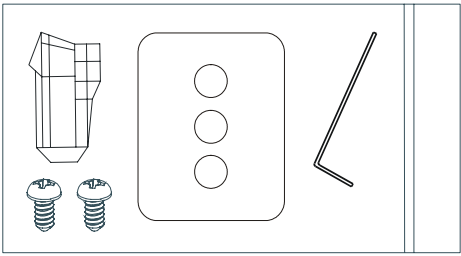
- High sensitivity, low smear, high anti-blooming, and high S/N ratio.
- Vertical double density and wide-dynamic range function, the ability to respond quickly and accurately to scenes or objects with high contrast and wide variations in light.
- * Mechanic IR cut-filter driving unit with AE/ Illumination Detector (sensor), provides change from color to B&W mode automatically for day and night 24-hour surveillance.
- OSD (On Screen Display) Setup Menu.
- Camera tile setup of up to 16 alphanumeric letters.
- Privacy image masking with free position.
- Camera control via either RS-422/RS485 or RS232 interface.
- PELCO (D and P)/ LG Protocol, selectable.
- Supports AES (Automatic Electronic Shutter), AI (Auto Iris), GC (Gain Control), WB (White Balance), BLC (Back Light Compensation), and *Digital Slow Shutter (DSS).
- Provides flickerless mode, color rolling suppression, and line-lock function.
- The camera accepts 2 types of auto iris lenses Video type (Video-Drive) and DC type (DC-Drive).
- Performance: 3x digital zoom, *freeze image, positive/ negative image, mirror function (left/ right), *reverse turn (up/ down), and *180° rotation.

<Note>

*** : The symbol indicates that the function is inapplicable to the economic type camera.**

4. PACKING LIST

Check and make sure all the items shown below are included in your product package.
If something is missing, contact your dealer as soon as possible.

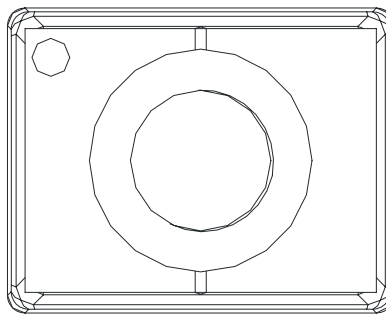
No.	Item	Picture	Quantity
1	Camera		1
3	Manual		1
3	Auto Iris Lens Plug Mounting Block Fixed Screws L-Wrench		1

5. NAME and FUNCTION of EACH PART

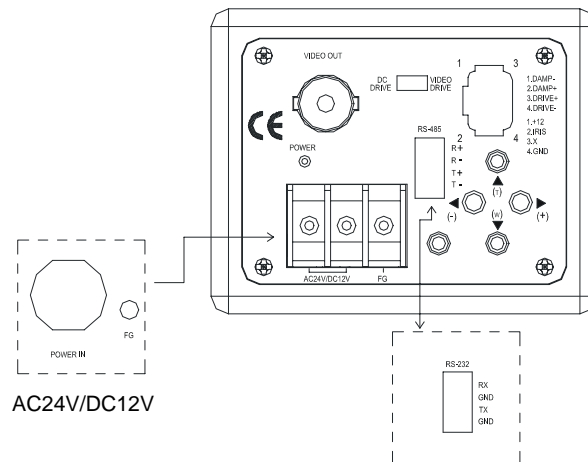
Side View



Front View



Rear View



1. Video Output: Composite Video 1Vp-p, 75 Ohms, BNC.

2. Key Control:

No.	Name	Function
1	(T)/▲	Zoom Tele or Up (▲)
2	(W)/▼	Zoom Wide or Down (▼)
3	(+)/▶	Increase Value (+)
4	(-)/◀	Decrease Value (-)
5	Menu	Enter or Exit Setup Menu

3. Protocol: AUTO/ NATIVE/ PELCO/ LG

4. Baud Rates: 2.4K/ 4.8K/ 9.6K/ 19.2K BPS

RS-232:

No.	Name	Function
1	RX	RS-232 Interface RX
2	GND	GND
3	TX	RS-232 Interface TX
4	GND	GND

RS-485/ RS-422:

No.	Name	Function
1	R+	RS-485/RS-422 Interface R+
2	R-	RS-485/RS-422 Interface R-
3	T+	RS-485/RS-422 Interface T+
4	T-	RS-485/RS-422 Interface T-

6. INSTALLATION

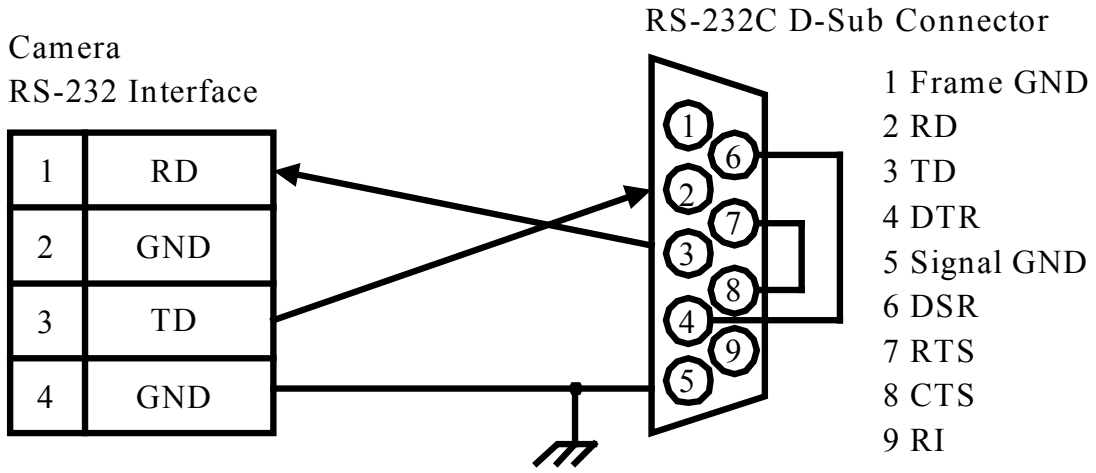


Figure 6-1

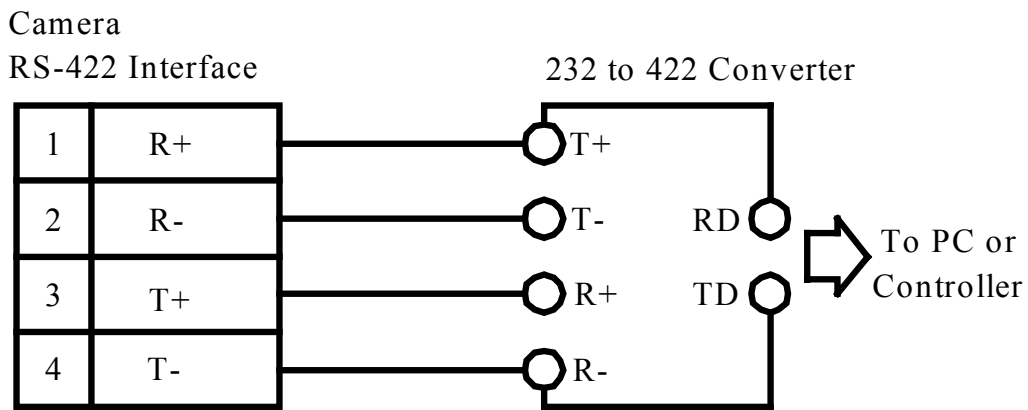


Figure 6-2

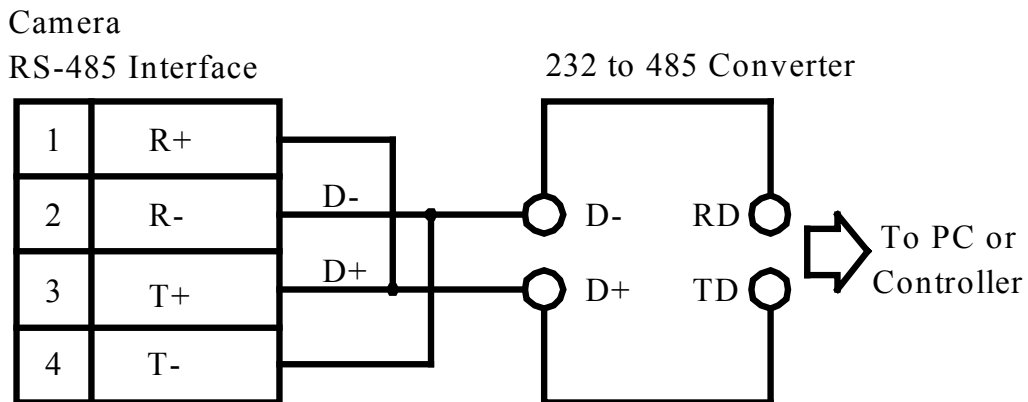


Figure 6-3

6.1 Native Keyboard Installation

- RS-485 interface is used for communicating native keyboard. Refer to Figure 6-3; connect R+ and T+ of the camera together; connect R+ and T+ of the camera to D+ of the native keyboard. Connect R- and T- of the camera together; connect R- and T- of the camera to D- of the native keyboard.
- User may adjust Camera ID, Protocol, Speed and Parity should only be adjusted via rear panel keys.

Communication	Setting
CAMERA ID	1 - 127
PROTOCOL	AUTO/ NATIVE
SPEED	9600
PARITY	NONE

The speed of native keyboard is fixed (9600), and the adjusted function is only effective, after exiting the OSD setup menu.

6.2 PELCO Keyboard (or compatible) Installation

- RS-422 interface is used for communicating PELCO keyboard. Refer to Figure 6-2; connect R+ of the camera to T+ of the PELCO keyboard. Connect R- of the camera to T- of the PELCO keyboard.
- User may adjust Camera ID via rear panel keys or via remote commands. Protocol, Speed and Parity should only be adjusted via rear panel keys.

Communication	Setting
CAMERA ID	0 - 253 for P protocol
	1 - 255 for D protocol
PROTOCOL	AUTO/ PELCO
SPEED	2400/ 4800/ 9600/ 19200
PARITY	NONE

The speed of camera should be the same as the speed of the keyboard, and the adjusted function is only effective, after exiting the OSD setup menu.

<Note>

Maximum cable distance for RS-422/ RS-485 communication over 24-gauge wire is 4,000 feet (1,219 m). Recommend using shielded twisted pair cable that meets the basic requirements for EIA RS-422 / RS-485 applications.

7. OPERATION

7.1 Operating Procedure

1. Mount the camera on the mounting bracket by using the hole on the top or bottom of the camera, and by using the enclosed mounting block, finished by 2 screws.
2. Connect the video output to the monitor or other video device via a 75 Ohms type coaxial cable.
3. Power Input Terminal (Dual Power): the camera accepts both AC 24V and DC 12 V power sources (non-polarity).
4. When applying video lens, please do not adjust “VR LEVEL” too low, it will result glittering images, please adjust it appropriately to obtain the optimum image quality.

7.2 Native Keyboard Operation

Normal Display Mode

Native Keyboard	Camera Function
BRIGHTNESS+	Brightness +
BRIGHTNESS-	Brightness -
Zoom TELE	Zoom Tele
Zoom WIDE	Zoom Wide
NEAR	None
FAR	None
Move Joystick Left	None
Move Joystick Right	None
Move Joystick Up	None
Move Joystick Down	None
MENU key	Accessing OSD Main Menu

OSD Setup Menu Mode

Native Keyboard	Camera Function
◀	Decrease (-)
▶	Increase (+)
▲	Cursor Up
▼	Cursor Down
BRIGHTNESS+	None
BRIGHTNESS-	None
Zoom TELE	None
Zoom WIDE	None
NEAR	None
FAR	None

Please refer to the native keyboard manual for more information.

7.3 PELCO Keyboard (or compatible) Operation

Normal Display Mode

PELCO Keyboard	Camera Function
OPEN	Brightness +
CLOSE	Brightness -
Twist Joystick clockwise or Zoom In	Zoom Tele
Twist Joystick counterclockwise or Zoom Out	Zoom Wide
NEAR	None
FAR	None
Move Joystick Left	None
Move Joystick Right	None
Move Joystick Up	None
Move Joystick Down	None
Enter 95; Hold the PRESET key (approximately five seconds) until the main menu appears on the screen.	Accessing OSD Main Menu

OSD Setup Menu Mode

PELCO Keyboard	Camera Function
OPEN	Sub Menu Enter
CLOSE	Sub Menu Exit
NEAR	Cursor Up
FAR	Cursor Down
Move Joystick Left	Decrease (-)
Move Joystick Right	Increase (+)
Move Joystick Up	Cursor Up
Move Joystick Down	Cursor Down
Twist Joystick clockwise or Zoom In	None
Twist Joystick counterclockwise or Zoom Out	None

Please refer to PELCO Keyboard (or compatible) manual for more information.

8. SYSTEM SETUP

8.1 Digital Zoom Operation:

Under normal display (before entering the OSD menu), use ▲(T)/ ▼(W) button to control the digital zoom (zoom range: 1x ~3x). Set WDR function to “ON”, the digital zoom auto switches to 1x zoom.

8.2 OSD (On Screen Display) Main Menu Description

Main Menu Display

MAIN MENU VER.xxxx	
EXPOSURE	↔
WDR	↔
* DAY/NIGHT	↔
WHITE BALANCE	↔
PRIVACY MASK	↔
EFFECT	↔
DISPLAY	↔
COMMUNICATION	↔
DEFAULT	ON
EXIT	↔

Main Menu Setup

- In order to display the setup menu on the screen, set the menu command or press the button panel.
- Use ▲(T)/ ▼(W) control buttons to select each item.
- Use ◀(-)/ ▶(+) control buttons to change the data.
- Use MENU control button to ENTER/ EXIT the menu display.

<Note>

* : The symbol indicates that the function is inapplicable to the economic type camera.

8.3 Sub Menu Description

Exposure Setup

EXPOSURE	
LENS TYPE	DC/ VIDEO
BRIGHTNESS	16
AGC MODE	AUTO
AGC MAX	165
AGC ADJ	NA
FLICKERLESS	NA
SHUTTER SPD	NA
*DSS MAX	OFF
DEFAULT	ON
RETURN	←→

1. Lens type can be switched to DC/ VIDEO or MANUAL. When the system is set to DC/ VIDEO, please put the switch (situated on the back of the camera) in “DC” or “VIDEO” position respectively according to the type of the lens.
2. Brightness setup range: 0~36.
3. AGC MODE: AUTO/ MANUAL selectable.
 - (1) AGC MAX: Set AGC MODE to AUTO (AGC MAX setup range = 0~255). When AGC MAX < 165, AE function of Day/ Night Mode becomes an ineffective function (data value “---” for D/N Mode will be shown on the display).
AGC MODE: Set to MANUAL, AGC MAX becomes an NA (Not Available) item.
 - (2) AGC ADJ: Set AGC MODE to AUTO, AGC ADJ becomes an NA (Not Available) item.
AGC MODE: Set to MANUAL, AGC ADJ can be set to fixed GAIN value (0~255).
4. SHUTTER SPD mode (NTSC: 1/100 and PAL: 1/120) is fixed, when FLICKERLESS mode is set to “ON”.
5. Ten Types of SHUTTER SPD Mode: AUTO, NORMAL (NTSC: 1/60 and PAL: 1/50), 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000, and 1/50000.
6. AGC MODE auto switches to manual, when SHUTTER SPD is set to 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000, 1/50000 or FLICKERLESS (set to “ON”).
7. Set WDR to “ON”, FLICKERLESS and SHUTTER SPD becomes an NA (Not Available) item.
8. *DSS MAX: Low speed shutter control, offers optimal brightness level (The higher the value, the higher the brightness level).
9. DEFAULT: Return to the factory-default configuration.
10. RETURN: Return to previous page.

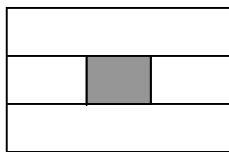
<Note>

* : The symbol indicates that the function is inapplicable to the economic type camera.

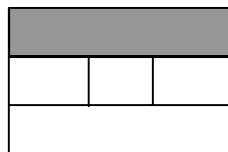
WDR Setup:

WDR	
WDR MODE	ON
WDR LEVEL	96
BLC MODE	NA
BLC LEVEL	NA
BLC AREA	NA
DEFAULT	ON
RETURN	↔

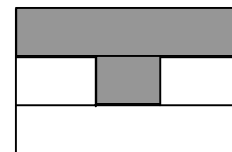
1. Set WDR MODE to “ON”, BLC MODE/ BLC LEVEL/ BLC AREA becomes an NA (Not Available) item, and the digital zoom will auto switch to 1x zoom.
2. WDR LEVEL (0~255): The higher the value, the higher the brightness level.
3. BLC MODE: Set WDR MODE to “OFF”, BLC MODE can be set to “ON/ OFF”.
4. BLC LEVEL (0~15): The higher the value, the higher the backlight compensation level.
5. Seven Types of BLC AREA Mode:
 (1) CENTER (2) TOPS (3) TOPL (4) BOTTOMS (5) BOTTOML (6) LEFT (7) RIGHT



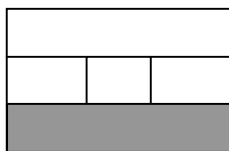
(1) CENTER



(2) TOPS



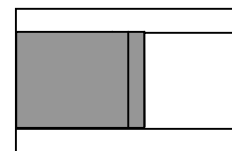
(3) TOPL



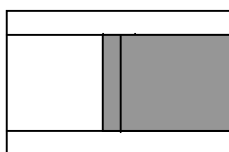
(4) BOTTOMS



(5) BOTTOML



(6) LEFT



(7) RIGHT

***DAY/NIGHT Setup:**

DAY/NIGHT	
D/N MODE	AE
DAY→NIGHT	83
NIGHT→DAY	212
SENSOR LEVEL	NA
FILTER DELAY	NA
DEFAULT	ON
RETURN	←→
AE VALUE	???
SENSOR VALUE	???

Note:

1. D/N MODE: Four types of setup (AE/ SENSOR/ DAY/ NIGHT).
 - (1) AE: Setup according to DAY NIGHT and NIGHT DAY (threshold value), auto switches to Color or B/ W. When AGC MAX < 165, AE function Day/ Night Mode becomes an ineffective function (data value “--” for D/N Mode will be shown on the display).
 - (2) SENSOR: Auto switches to Color or B/ W according to SENSOR LEVEL and FILTER DELAY setup.
 - (3) DAY: Fixed to Color mode.
 - (4) NIGHT: Fixed to B/ W mode.
2. DAY NIGHT: The threshold value of color change (from color to B/ W) under AE mode. Switches to B/W when “Day Night” “AE Value”.
3. NIGHT DAY: The threshold value of color change (from B/ W to color) under AE mode. Switches to Color when “Night Day” “AE Value”.
4. SENSOR LEVEL
 - (1) Higher the value: When the environment illumination is insufficient the process of switching to B/ W will be delayed.
 - (2) Lower the value: When the environment illumination is insufficient advanced switching process from Color to B/ W will quickened.
5. FILTER DELAY: The delay time of the system switching from color to B&W mode when environment illumination change occurs (Filter Delay Time: 0~15 Sec.).
6. When D/N MODE is set to “AE/ DAY/ NIGHT” mode, SENSOR LEVEL and FILTER DELAY become an NA (Not Available) item.
7. AE VALUE: When D/ N is set to AE, it will reflect the illumination degree of the current scene.
8. SENSOR VALUE: When D/ N is set to SENSOR, it will reflect the illumination degree of the current scene.
9. The table shown below are reference values, please setup according to the current scene.

Lens Type	Shutter Speed	WDR	DAY NIGHT	NIGHT DAY
DC Drive Video Drive	NA/ Normal	On / Off	83	212
Manual Iris	NA	On	83	195
Manual Iris	Auto	Off	83	212
	Normal		83	212

<Note>

* : The symbol indicates that the function is inapplicable to the economic type camera.

WHITE BALANCE Setup:

WHITE BALANCE	
WB MODE	AUTO
RED GAIN	NA
BLUE GAIN	NA
PUSH AUTO	NA
DEFAULT	ON
RETURN	←→

1. Five Types of WB MODE: AUTO, INDOOR, OUTDOOR, MANUAL, and PUSH AUTO.
2. RED GAIN/ BLUE GAIN operates only when WB MODE is set to MANUAL, otherwise it is an NA (Not Available) item.
3. When WB MODE is set to PUSH AUTO:
 - PUSH AUTO ON: Enable auto tracing white balance.
 - PUSH AUTO OFF: Disable auto tracing white balance.

PRIVACY MASK Setup:

PRIVACY MASK	
AREA	1
MASK	OFF
START X	20
END X	70
START Y	20
END Y	30
DEFAULT	ON
RETURN	←→

1. AREA: PRIVACY MASK (Maximum 8 mask area setups).
2. MASK: Select "ON/ OFF" to enable or disable mask area.
3. START X: Horizontal start position (0~180).
4. END X: Horizontal end position (0~180).
5. START Y: Vertical start position (0~140).
6. END Y: Vertical end position (0~140).

EFFECT Setup:

EFFECT	
SHARPNESS	7
POSI/NEGA	POSI
MIRROR	OFF
FREEZE	OFF
SYNC	INT
V PHASE	NA
DEFAULT	ON
RETURN	↔

1. SHARPNESS: Video sharpness level setup (0 ~15).
2. POSI/NEGA: Images can be set to POSI (Positive Image) or NEGA (Negative Image).
3. Four Types of MIRROR Mode: OFF/ HORIZONTAL/ *VERTICAL/ *ROTATE.
4. *FREEZE: Set FREEZE to “ON” to enable still field image.
5. SYNC: When using a DC 12V adaptor, the sync setting is set to internal sync.
6. V PHASE: When L/L mode is selected, you can adjust the desired phase (0 ~ 358), otherwise it is an NA (Not Available) item.

<Note>

* : The symbol indicates that the function is inapplicable to the economic type camera.

DISPLAY Setup:

DISPLAY	
TITLE	
TITLE DISP	ON
TITLE POS	RIGHT DOWN
ID DISP	ON
ID POS	RIGHT DOWN
ZOOM DISP	ON
ZOOM POS	LEFT DOWN
DEFAULT	ON
RETURN	↔

1. TITLE :You can enter up to 16 characters.
2. Four Setup Positions (TITLE/ ID/ ZOOM):
RIGHT DOWN/ LEFT UP/ RIGHT UP/ LEFT DOWN.

COMMUNICATION Setup:

DISPLAY	
CAMERA ID	1
PROTOCOL	AUTO
SPEED	9600
PARITY	NONE
RETURN	←→

Please refer to “6. INSTALLATION” for more information on Communication.

9. CAMERA CONTROL PROTOCOL

Native Protocol Format

Interface Type: RS485

Version: 1.02

Command Packet	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6
	Receiver ID	Transmitter ID	OP Code	Data 0	Data 1	Check Sum

Definitions: (in Hexadecimal)

Keyboard ID: XX

Camera ID: YY

Check Sum: ZZ (Byte1 xor Byte2 xor Byte3 xor Byte4 xor Byte5).

Note: "xor" means Exclusive OR.

Event	Keyboard Send	Camera Response	Remarks
Linking	step1.01 XX 00 00 00 ZZ step2.02 XX 00 00 00 ZZ step3.03 XX 00 00 00 ZZ step128.80 XX 00 00 00 ZZ	XX YY 00 00 00 ZZ	The camera will respond at once after keyboard sent correct device ID.
Button NUM+"ENTER" or "CH+" or "CH-"	step1.YY XX 4A 00 00 ZZ step3.YY XX 01 00 00 ZZ	step2.XX YY 4A 00 ## ZZ step4.XX YY 01 && \$\$ ZZ	"##": Device Type "\$": Device State
Button "BRIGHTNESS +"	step1.YY XX 23 02 00 ZZ step3.YY XX 23 05 00 ZZ	step2.XX YY 23 02 00 ZZ step4.XX YY 23 05 00 ZZ	
Button "BRIGHTNESS -"	step1.YY XX 23 03 00 ZZ step3.YY XX 23 05 00 ZZ	step2.XX YY 23 03 00 ZZ step4.XX YY 23 05 00 ZZ	
Button "ZOOM TELE"	step1.YY XX 24 01 00 ZZ step3.YY XX 24 04 00 ZZ	step2.XX YY 24 01 00 ZZ step4.XX YY 24 04 00 ZZ	
Button "ZOOM WIDE"	step1.YY XX 24 00 00 ZZ step3.YY XX 24 04 00 ZZ	step2.XX YY 24 00 00 ZZ step4.XX YY 24 04 00 ZZ	
Button "MENU" for call OSD	step1.YY XX 10 00 00 ZZ step3.YY XX 28 04 00 ZZ step5.YY XX 28 FF 00 ZZ	step1.YY XX 10 00 00 ZZ step3.YY XX 28 04 00 ZZ step5.YY XX 28 FF 00 ZZ	OSD MODE
OSD MODE Button "▶"	step1.YY XX 28 03 00 ZZ step3.YY XX 28 FF 00 ZZ	step2.XX YY 28 03 00 ZZ step4.XX YY 28 FF 00 ZZ	OSD MODE
OSD MODE Button "◀"	step1.YY XX 28 02 00 ZZ step3.YY XX 28 FF 00 ZZ	step2.XX YY 28 02 00 ZZ step4.XX YY 28 FF 00 ZZ	OSD MODE
OSD MODE Button " "	step1.YY XX 28 00 00 ZZ step3.YY XX 28 FF 00 ZZ	step2.XX YY 28 00 00 ZZ step4.XX YY 28 FF 00 ZZ	OSD MODE
OSD MODE Button " "	step1.YY XX 28 01 00 ZZ step3.YY XX 28 FF 00 ZZ	step2.XX YY 28 01 00 ZZ step4.XX YY 28 FF 00 ZZ	OSD MODE
OSD MODE Button "ENTER"	step1.YY XX 10 00 00 ZZ step3.YY XX 28 06 00 ZZ	step2.XX YY 10 20 03 ZZ step4.XX YY 28 06 ** ZZ	"**": 11 OSD off 00 OSD on
OSD MODE Button "ESC"	step1.YY XX 10 00 00 ZZ step3.YY XX 28 05 00 ZZ	step2.XX YY 10 20 03 ZZ step4.XX YY 28 05 ** ZZ	"**": 11 OSD off 00 OSD on

DEVICE TYPE	##
CAMERA	00
RECEIVER BOX	01

DEVICE STATE	\$\$
RESERVED	BIT0
RESERVED	BIT1
RESERVED	BIT2
OSD MENU	BIT3
RESERVED	BIT4
RESERVED	BIT5
RESERVED	BIT6
RESERVED	BIT7

Examples:

To control the camera device (address = 1) via keyboard (address = F0), the command string (in Hexadecimal) would be:

Zoom Tele Command

Keyboard: 01 F0 24 01 00 D4

Device: F0 01 24 01 00 D4

Zoom Stop Command

Keyboard: 01 F0 24 04 00 D1

Device: F0 01 24 04 00 D1

Zoom Wide Command

Keyboard: 01 F0 24 00 00 D5

Device: F0 01 24 00 00 D5

Zoom Stop Command

Keyboard: 01 F0 24 04 00 D1

Device: F0 01 24 04 00 D1

Brightness + Command

Keyboard: 01 F0 23 02 00 D0

Device: F0 01 23 02 00 D0

Brightness Stop Command

Keyboard: 01 F0 23 05 00 D7

Device: F0 01 23 05 00 D7

Brightness - Command

Keyboard: 01 F0 23 03 00 D1

Device: F0 01 23 03 00 D1

Brightness Stop Command

Keyboard: 01 F0 23 05 00 D7

Device: F0 01 23 05 00 D7

OSD Menu Command

Keyboard: 01 F0 28 04 00 DD

Device: F0 01 28 04 00 DD

OSD Menu Exit Command

Keyboard: 01 F0 28 05 00 DC

Device: F0 01 28 05 11 CD

OSD Menu Enter Command

Keyboard: 01 F0 28 06 00 DF

Device: F0 01 28 06 00 DF

10. SPECIFICATION

Specification	Standard Type Camera	Economic Type Camera
Image Device	1/3" Color Sony Solid State Image Device CCD	
A/D (Analog to Digital) Converter	10 bit	
Picture Elements	NTSC: 768 x 494 (H x V) / PAL: 752 x 582 (H x V)	
Resolution	470 TV lines	
Min. Illumination	0.1 Lux (Day & Night on), Color 0.003 Lux (DSS) / F1.2	0.1Lux/ F1.2
S/N Ratio	More than 48 dB (AGC OFF)	
Electronic Shutter	Auto: NTSC 1/60~1/100,000s, PAL1/50~1/100,000s Normal:1/60(N),1/50(P) Manual:1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000,1/50000	
Scanning System	NTSC: 525 lines / PAL: 625 lines	
Flickerless Mode	ON/OFF	
Iris Control	Video / DC Driver	
Gain Control	Auto/manual	
White Balance	Auto / Indoor / Outdoor/Manual/Push Auto	
Back Light Comp.	ON/OFF (0~15 adjustable), 7 types selectable	
WDR (Wide Dynamic Range)	ON/OFF (0~255 adjustable)	
Day & Night (ICR),	AE /Sensor/ Day/ Night	-
Digital Zoom	3 x	
Camera ID	000 ~ 255	
Camera Title	Up to 16 Character	
Mirror	OFF / Horizontal / Vertical / Rotate	OFF/Horizontal
Freeze	ON/OFF	-
Positive / Negative	ON/OFF	
Digital Slow Shutter (DSS)	OFF, 2~20, 40, 80, 160 FLD	-
Video Output	1Vp-p / 75 Ohms	
Remote Control	RS422/485 (RS232 optional)	
Power Supply	AC 24V / DC 12V, 5.8W AC 100~240V, <7W	
Gamma	0.45	
Sync. System	INT / LL	
Operating Temp.	-10 ~ 50 (14 ~ 122)	
Storage Temp.	-20 ~ 60 (-4 ~ 140)	
Operating Humidity	0% RH ~ 70 % RH	
Storage Humidity	0% RH ~ 85 % RH	
Dimensions (WxHxD)	66 mm x 52 mm x 146mm	
Weight	0.54 kg	

(Note: Design and specifications are subject to change without prior notice.)

MEMO

MEMO

MEMO