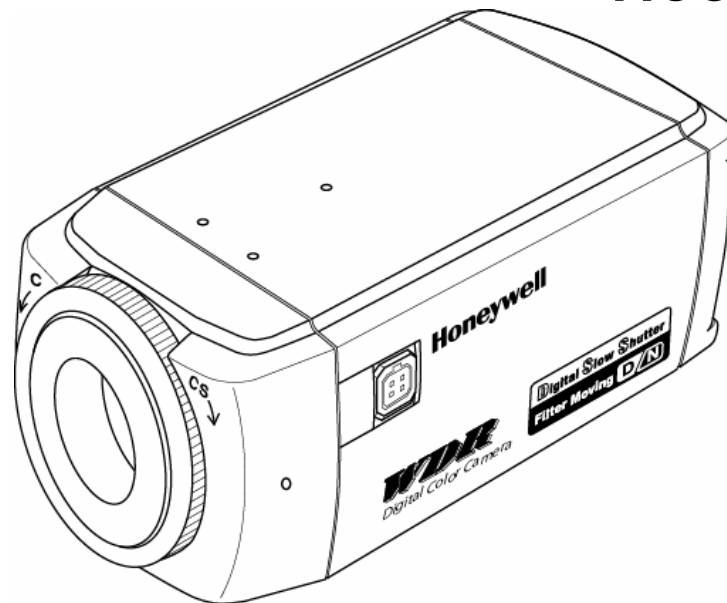


Honeywell

OPERATION MANUAL

*Day and Night / WDR
OSD COLOR CAMERA*

HCC-745NTW/PTW



READ AND KEEP THIS OPERATION MANUAL



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 appliance.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF ELECTRIC
SHOCK, DO NOT REMOVE COVER
(OR BACK). NO USER SERVICEABLE
PARTS INSIDE.
PREFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.



Indicate a potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Warning:

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Warning:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



CAUTION FOR SAFE OPERATION

1. Water and Moisture

To prevent fire or shock hazard, do not expose this camera to rain or moisture.

2. Servicing

Do not attempt to disassemble or repair by yourself. You may be exposed to dangerous voltage or other hazards. Note that all servicing is qualified service personnel. Modifications not approved by manufacturer could void the user's authority to operate the equipment.

3. Power Sources

To prevent electric shocks and risk of hazards, do NOT use more than the specified power source.

4. Environment

Do not install too warm or too cold place. Recommended operation temperature is between -5°C and 60°C

5. Sunlight

Do not point the camera at the sun. CCD can be damaged.

6. Heavy Shock and Vibration

Do not drop the camera or subject it to heavy shock of vibration.

7. Install on an Unstable Place

Do not place or install this camera on an unstable place, stand, tripod, bracket or table. That may cause serious injury to people or damage to appliance.

8. When operation is incorrect or a malfunction is observed

While operating, if any abnormal condition (strange sound, smell or smoke) or a malfunction (no pictures, etc.) is observed, stop using the camera immediately, turn the power off, then contact your supplier.

9. Cleaning

Turn the power off and wipe off the dirt with a dry soft cloth. If it is extremely dirty, use furniture cleaner to wipe it off. To clean the lens, use a blower or lens cleaning tissue. (available from any camera dealer)

10. Do not shoot any source of bright light.

If the objects contain very bright areas, bright vertical or horizontal lines may appear on the screen. This is called "smear", a Phenomenon which often occurs with solid-state pickups, and is not a malfunction.

11. Damage Requiring service

Unplug the camera from the power source and refer servicing to qualified service personnel under the following condition:

- a. If the power-supply cord or plug is damaged.
- b. If the camera has been exposed to rain or water.
- c. If liquid has been spilled, or objects have fallen into the camera.
- d. If the camera does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the camera to its normal operation.
- e. If the camera has been dropped or the cabinet has been damaged.
- f. If the camera exhibits a distinct change in performance.

Warranty is not covered in case of natural disaster or wrong Installation.

CONTENTS

1. Features	-----	5
2. Names & Functions	-----	6
3. Installation	-----	8
4. Remote Control Connections	-----	10
5. On Screen Display	-----	11
6. Specifications	-----	19
7. Dimensions	-----	20

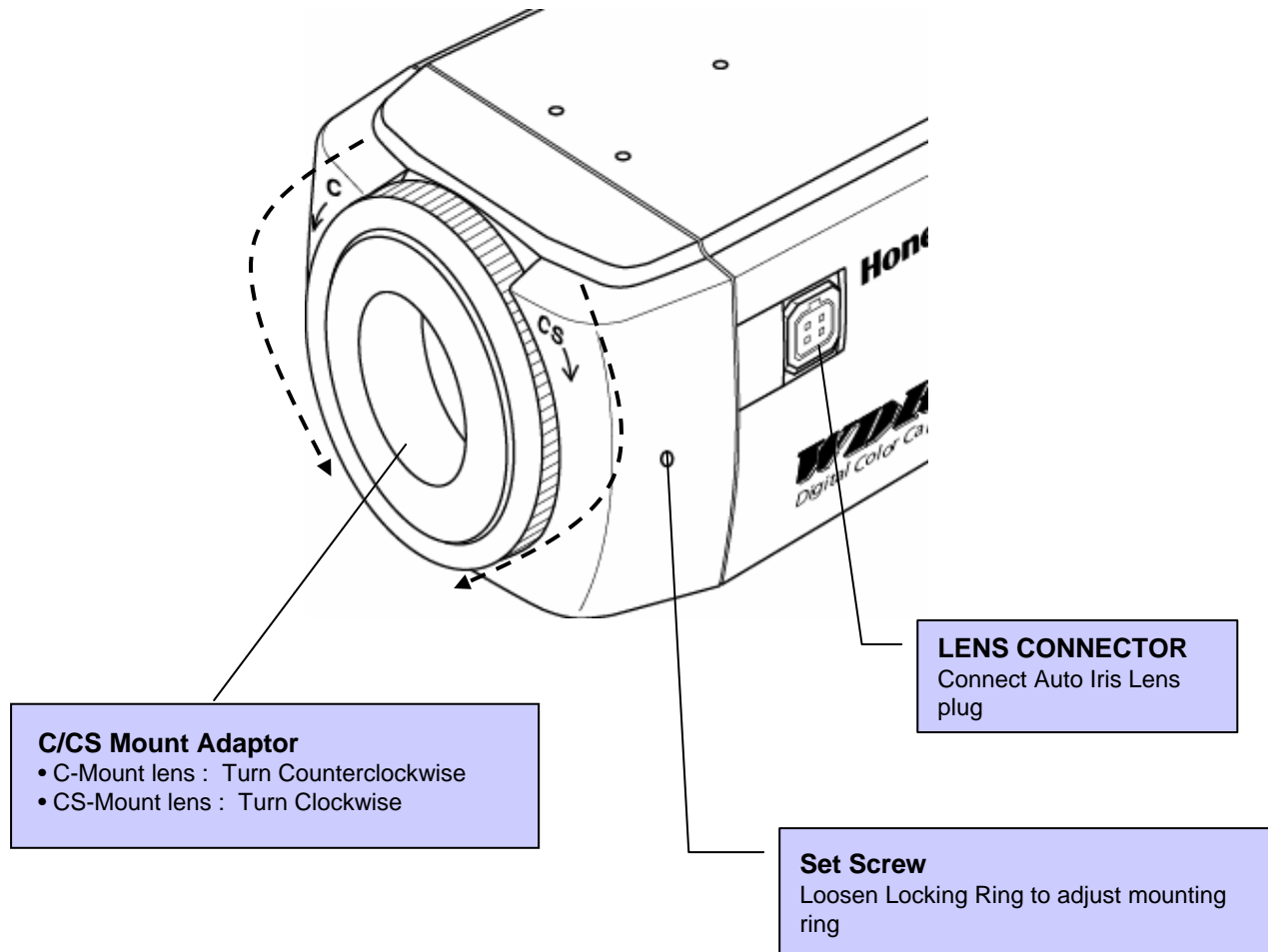
Thank you for using this OSD Color Camera with Day and Night, WDR. To get the best efficiency, read carefully all instructions in this manual before use, and keep this manual for reference. If you have any problems with this camera, contact your supplier to service.

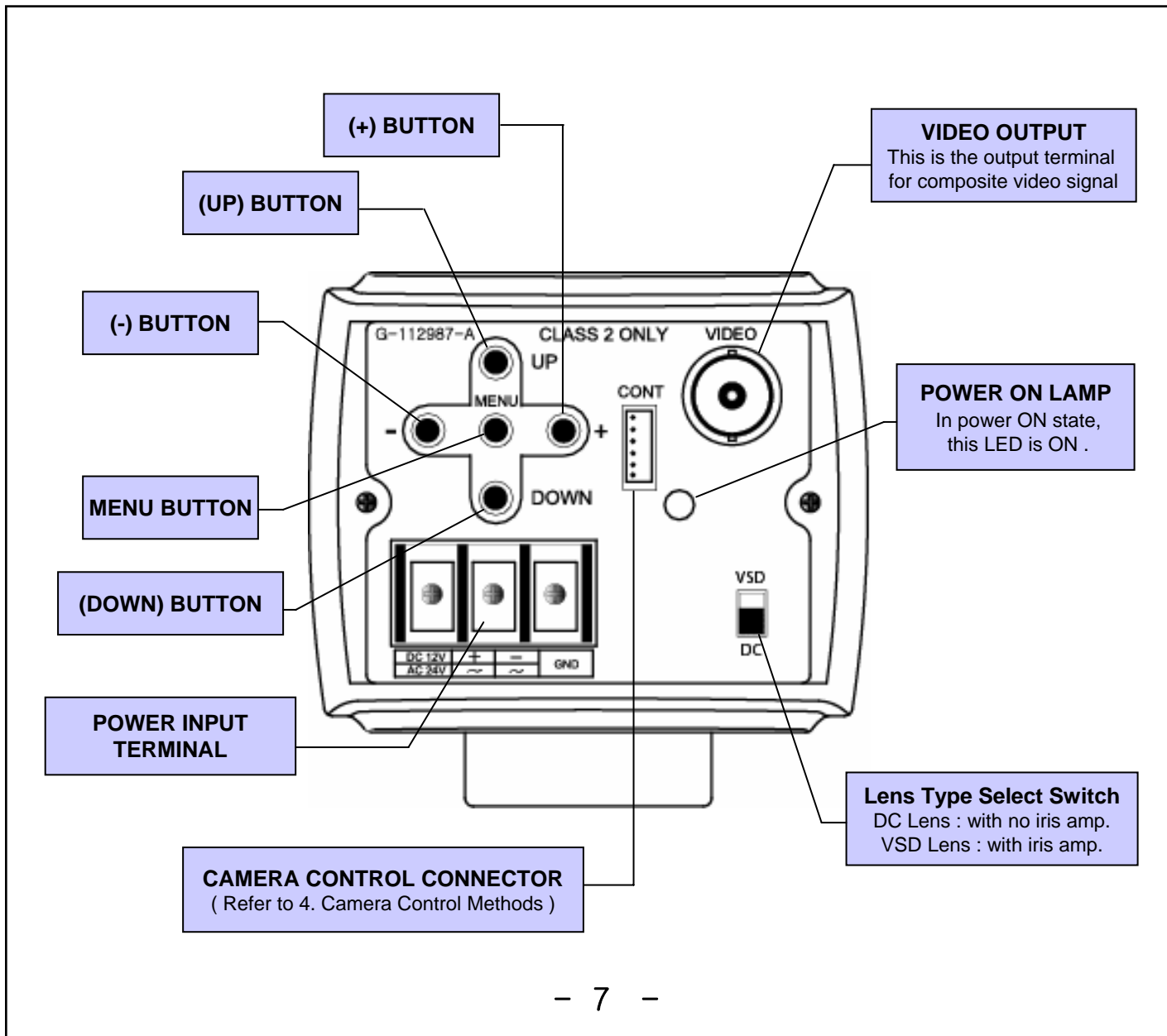
1. Features

Honeywell's HCC-745NTW/PTW Series is a high sensitivity CCD color camera with high sensitivity function of Day & Night function and field integration technique.

- 1/3" Double Scan Color CCD (NTSC: 410,000 / PAL: 470,000)
- Outstanding BLC implementation with WDR(Wide Dynamic Range) function.
(3 steps available : OFF / BLC / WDR)
- Adapted CS/C mount lens adjustable.
- Excellent signal-to-noise ratio of more than 50dB.
- High Sensitivity : Minimum illumination of 0.001lx @ F1.2, 50IRE, DSS On X510, Night mode
- 2-WAY Auto Iris : Video iris or DC iris lens can be used.
- 2-WAY Auto Iris : Video iris or DC iris lens can be used.
- OSD Control :
Flickerless, AGC, Manual shutter control, Maximum Fields Select,
WDR, BLC, Title and Camera ID setting, Sync Mode
- External synchronization with LINE LOCK(L/L) and Auto Detection.
- Auto White Balance : Auto white balance realizes true color reproduction within various light sources.
- Remote Control through RS485 / RS232C
 - Camera ID : 0 ~ 255
 - Title : 10 characters
 - Camera ID & Title Display Position : Bottom Right, Bottom Left, Top Right, Top Left, No Display
 - AWB Mode : ATW, AWC, INDOOR, USER FIX, OUTDOOR, Fluorescent, MWB
 - BLC Mode : OFF, ON
 - WDR Mode : OFF, ON
 - ELC / ALC Mode : ELC (AUTO/Manual), ALC (VSD Lens/DC Lens)
 - Max Fields Control : x2 ~ x510
 - Sync. Control : AUTO, Internal, L/L (V.PH control)
 - Shutter Speed Control : 8 steps including Flickerless
 - Max AGC Control : OFF ~ 38dB

2. Names & Functions





3. Installation

3.1 The packing box should include, in addition to this User Guide:

- One HCC-745NTW or HCC-745PTW camera
- One 6-pin connection cable (G-113510-200)
- One Auto Iris lens plug

3.2 Mounting a Lens

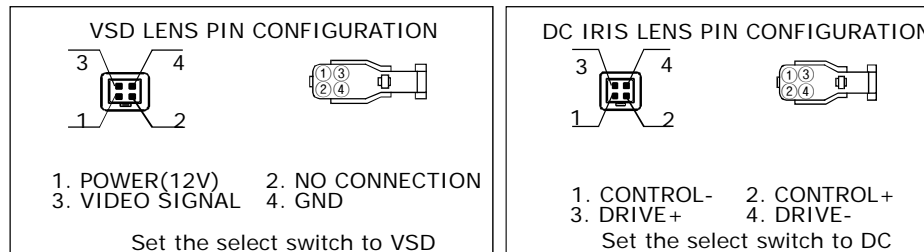
3.2.1 C/CS Mount Lens

- ① Remove the protective cap in front of the camera.
- ② Adjust the mount ring whether it is for C or CS.
- ③ Loosen Set Screw.
- ④ Turn the mount ring counterclockwise in case of C-Mount Lens.
Turn the mount ring clockwise in case of CS-Mount Lens

3.2.2 Auto Iris Lens

- ① Remove the cover of the auto iris lens plug and connect with the lens cable.
- ② Connect the auto iris lens plug to the 4-pin lens terminal on the side of the camera.
- ③ Set the EE MODE to ALC MODE on the OSD menu (see 5.6 AE MODE)
 - Auto iris lens with no amplifier : Set the DC LENS on the OSD menu
 - Auto iris lens with amplifier : Set the VSD LENS on OSD menu

👉 Adjust by using "LENS ADJ." on OSD menu to avoid hunting.



④ Set the switch on the rear of the camera to DC or VSD.

- ☞ Use the connection recommended by the manufacturer.
(E4-191, Chuo Musen, Japan) For best practices, read the lens manual carefully. You may need to set the flange back focus.

3.3 Flange back focus adjustment

3.3.1 Fixed Lens

- a. Loosen the setscrew and set the lens focus ring to infinity (∞) .
- b. Turn the back focus adjustment ring until you see a clear image (the distance from the camera to the object is more than 23m).
- c. Tighten the setscrew.

3.3.2 Zoom lens

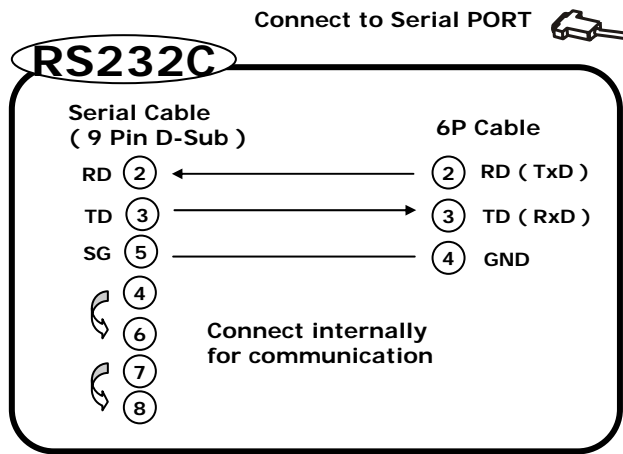
- a. Loosen the setscrew and set the lens to the maximum telephoto position.
- b. Turn the back focus adjustment ring to adjust the focus.
- c. Auto iris lens: Aim the camera at a comparatively dark object or reduce the ambient light so that the iris is fully open.
- d. Set the lens to its maximum wide angle position, then set the focus.
- e. Repeat step b, c and d until the difference between the focusing positions is as small as possible.
- f. Tighten the setscrew when the best focusing point is found.

3.4 Connection of POWER supply

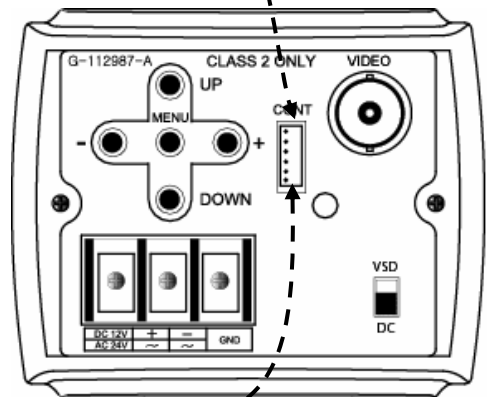
- ☞ Check the power source from the external power supply before power on.
- ☞ Power source capacity :
 - AC 24V, more than 500mA (Recommended Honeywell HAC-2450)
 - DC 12V, more than 500mA (Recommended Honeywell HDC-1260R)

4. Remote Control Connections

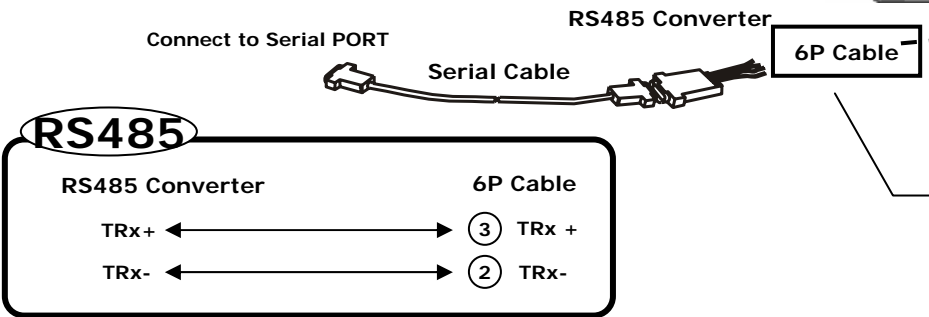
4.1 RS-232C connection (HCC-745NTW/PTW)



- 1. Red : Not Use
- 2. Blue : RD(TxD)
- 3. Yellow : TD(RxD)
- 4. Black : GND
- 5. Red : Not Use
- 6. Black : Not Use

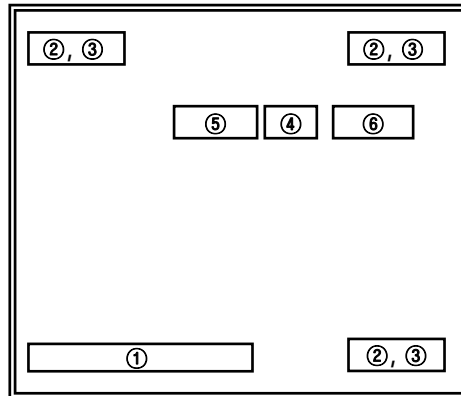


4.2 RS-485 connection (HCC-745NTW/PTW-VR)



- 1. Red : Not Use
- 2. Blue : TRx-
- 3. Yellow : TRx+
- 4. Black : Not Use
- 5. Red : Not Use
- 6. Black : Not Use

5. On Screen Display



<Fig5-1. OSD Information Display>

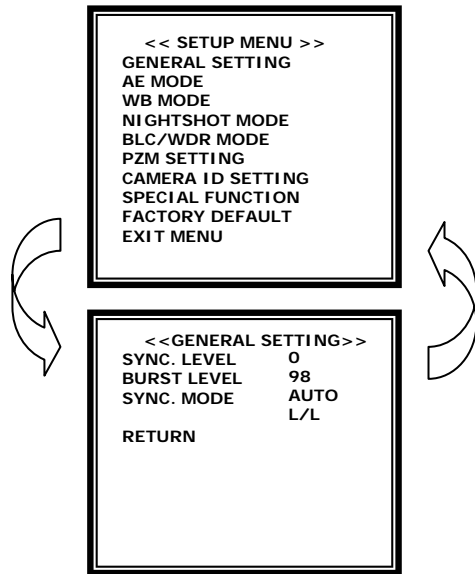
5.1 Understanding the On-Screen Display

- a. Press MENU briefly to confirm the current operation setup.
The information (see Fig 5-1) will disappear after five seconds if there is no button action.
- b. When it zoom in or out pressing UP or DOWN key, whole OSD Information will appear and then disappear.
Press (+) , (-) button, only upper part of OSD Information (for displaying camera mode) will appear and then disappear.
(It is for checking current whole camera mode and zoom position)
- c. Even though the OSD message disappears the Camera ID or Title will continue to display. If you do not wish to display the ID, you can change the display position. (see 5.11)
Options are: Bottom Right, Top Left, Top Right, Non display.

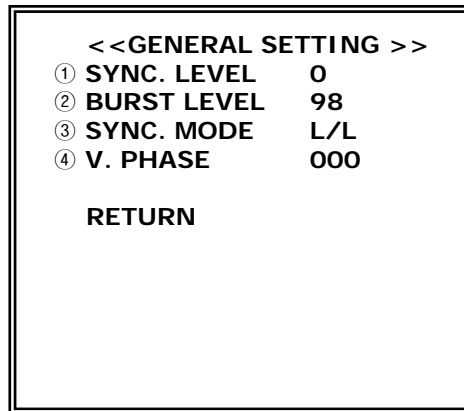
* If you do not need to display the Operating OSD (for example, for an external text overlay board), it can be set to OFF at all times through a remote control using RS232C or RS485 connection.

	FUNCTION	OSD Format	DESCRIPTION
①	ZOOM DISPLAY	Dx2.5 >>TELE	Zoom TELE
		Dx1.0 << WIDE	Zoom WIDE
②	CAMERA ID	None display	ID : 0
		ID : 002	ID : 1 ~ 255
③	TITLE	■■■■■■■■	See 5.11
④	Back Light	Non display	Back Light OFF
		BL	Back Light ON
⑤	Shutter Speed	1/60 (1/50)	NTSC:1/60, PAL :1/50
		FL	NTSC:1/120, PAL:1/100
		1/250	1/250
		1/500	1/500
		1/1000	1/1000
		1/2000	1/2000
		1/4000	1/4000
		1/10000	1/10000
		1/20000	1/20000
⑥	WB MODE	ATW	Auto Trace White Balance
		AWC	One Push mode
		IN	Indoor Preset (3200° K)
		FRS	Fluorescent (4200° K)
		USR	User mode
		OUT	Outdoor preset (5400° K)
		MWB	Manual mode

<Table5-1. Operating OSD description>



<Fig5-2. SETUP MENU change>



<Fig5-3. General Setting >

5.2 Display SETUPMENU

- a. Press and hold the MENU (center) button for 2 seconds to display the Setup menu.
- b. Press the UP or DOWN buttons to select a menu item.

5.3 Move from SETUPMENU to submenu

- a. Press the MENU button to enter the selected submenu.
- b. Press the + or – buttons to increase/decrease the value of the selected item.

5.4 Saving your Settings

When you are satisfied with your settings:

- a. Press MENU for two seconds. The submenu is replaced by one of two messages:
 - ① “QUIT?” : displays when you have not changed any settings.
Selecting QUIT exits OSD menu without saving any changed values.
 - ② “SAVE?” : displays when values have been changed.
Selecting SAVE exits OSD menu and saves your changes.
- b. Press + or – to select SAVE or QUIT and press MENU to exit OSD. Press UP or DOWN buttons to cancel the SAVE/QUIT and return to the OSD.

5.5 General Setting

- ① SYNC. Level
: Adjust the proper SYNC. Level from 0~15.
SYNC. LEVEL 0 → 1 → ... → 15
- ② BURST Level
: Adjust the proper BURST Level from 0~255.
BURST LEVEL 0 → 1 → ... → 255
- ③ SYNC. Mode
: To synchronize the vertical interval sync pulse of your camera with other equipment to reduce the effect of picture roll on the monitor.
SYNC. MODE AUTO → INTERNAL → L/L
- ④ Vertical Phase
: Adjust the proper phase in L/L.
V. PHASE 0 → 1 → ... → 524

Notice

L/L mode is not available in DC 12V power.

<< WB MODE >>	
①	MODE USER
②	CONTROL R/B CONT
③	RED GAIN 1
④	BLUE GAIN 2
	RETURN

<Fig5-6. White Balance Control>

5.7 White Balance Mode

① MODE

: To set how the camera tracks to accept different lighting conditions within the color range of 2,500° K ~ 8,000° K.

ATW (Auto Trace White Balance Mode)

: Feedback system that automatically aligns the white balance (2,500° K ~ 8,000° K).

IN (Indoor)

: General indoor scenes preset (3200° K)

OUT (Outdoor)

: Preset for outside environments and high contrast scenes where the camera is focused on the darker (5400° K)

MANUAL

: RED GAIN, BLUE GAIN are changed depending Black Body

AWC (Auto/PushAuto)

: Performs faster action than ATW mode without an operating range

FLUORES. (Fluorescent)

: Office environments with fluorescent or tungsten lighting. Provides lowest dynamic range of all presets (4200° K)

USER

: RED GAIN, BLUE GAIN are adjustable (0 ~ 255)

② CONTROL

ATW	AUTO
IN	3200° K
OUT	5400° K
MANUAL	R<-->B
AWC	LOCK → PUSH
AWC	AUTO
FLUORES.	4200° K
USER	R/B CONT

1. **MANUAL** : Press + or – button to adjust RED GAIN, BLUE GAIN automatically to fit Black Body.

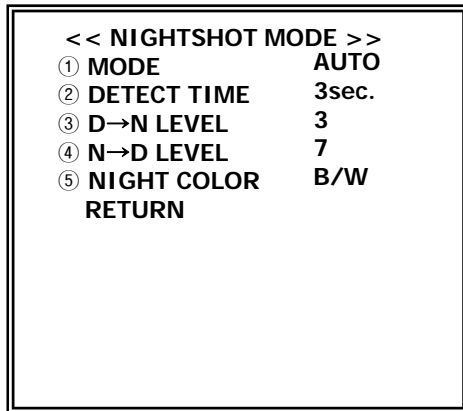
2. **PUSH** : Press + or – button to start the AWC operation.
LoCK : Release the key to fit the present shooting scene's white balance

③ RED GAIN (USER mode)

RED GAIN **0 → 1 → → 254 → 255**

④ BLUE GAIN (USER mode)

BLUE GAIN **0 → 1 → → 254 → 255**



<Fig5-7. NIGHTSHOT Control>

5.8 NIGHTSHOT MODE

① MODE

: The Nightshot menu allows you to set how the camera reacts to changes in low light illumination and to set when the camera switches between Night and Day modes.

AUTO – The camera removes or inserts IR cut filter by auto detecting luminance.

ON – IR cut filter is removed (Night mode)

OFF – IR cut filter is inserted (Day mode)

MODE **OFF → AUTO → ON →**

② DETECT TIME

: Sets the time – 1 to 10 seconds – before the camera switches to Day or Night mode after detecting a low light condition.

DETECT TIME **1 sec. → 2 sec. → → 10 sec.**

③ DAY to NIGHT threshold

: Determines the low light detection level – 1 to 10 – when the camera switches to Night mode. The lower the value, the darker the lighting conditions before the camera switches.

D→N LEVEL **1 → 2 → 3 → → 15**

④ NIGHT to DAY threshold

: Determines the low light detection level – 1 to 10 – when the camera switches to Day mode. The higher the value, the brighter the lighting conditions before the camera switches.

N→D LEVEL **15 → 9 → 8 → → 1**

Notice

MODE must be set to AUTO. D->N LEVEL must be set at least 2 less than the N->D LEVEL setting.

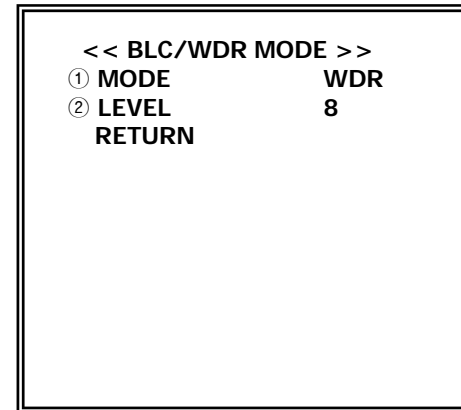
⑤ NIGHT COLOR

: Set the color mode as B/W (monochrome) or COLOR in Night mode.

NIGHT COLOR **B/W → COLOR →**

Notice

MODE must be set to AUTO or ON.



<Fig5-8. BLC/WDR MODE >

5.9 BLC/WDR MODE

① MODE

: Prevents the object in the center of the image from darkening (silhouette effect) when there is excessive light from behind.

MODE **OFF → BLC → WDR →**

WDR [Wide Dynamic Range] is one of Backlight Compensation, you can watch not only the object in the center but also the objects around clearly.

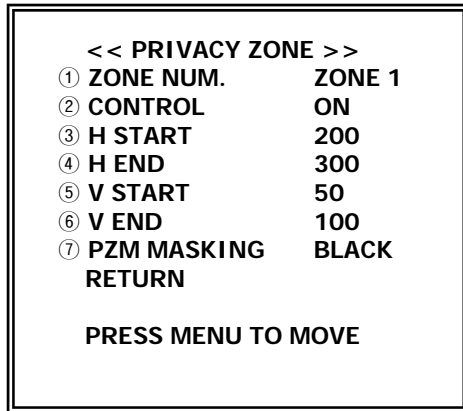
② LEVEL

: Adjust the proper level for WDR.

LEVEL **0 → 1 → 2 → → 15**

Notice

If you set WDR ON, you will not be able to digital zoom in or out.



<Fig5-10. Privacy Zone Masking>

5.10 PRIVACY ZONE

① ZONE

:PZM(Privacy Zone Mask) is to hide the unwanted view to protect privacy invasion. It works with Zoom/PAN/TILT operation. Select PZM zone upto 8 zones.

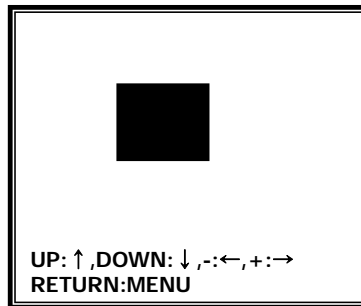
ZONE NUM. ZONE 1 → ZONE 1 → → ZONE 8

② CONTROL

: Set ON/OFF for each PZM Zone.

CONTROL OFF → ON →

Press and hold the MENU (center) button for 2 seconds to display PZM move menu. Move PZM to appropriate position by using UP/DOWN/-/+ button. Press and hold the MENU button for 2 seconds again to return previous menu.



<Fig5-9. PZM move>

③ Horizontal Start position
H START 200

④ Horizontal End position
H END 300

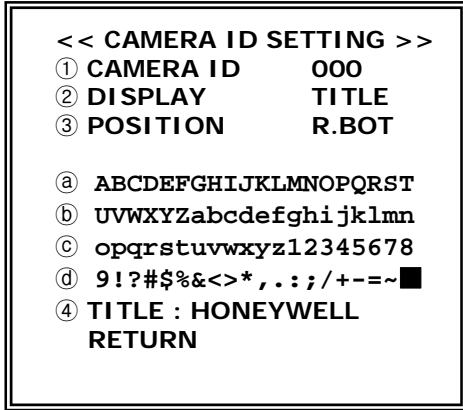
⑤ Vertical Start position
V START 50

⑥ Vertical End position
V END 100

⑦ MASKING COLOR

: Choose the color to mask the PZM zone. 10 color (Black, Gray, Light Gray, White, Red, Blue, Green, Yellow, Cyan, Magenta).

PZM MASKING BLACK → D.GRAY → .. → MAGENTA



<Fig 5-11. CAMERA ID SET >

5.11 Camera ID SET

① ID SET

: Camera ID is indicating number assigned each Camera in case of controlling many Cameras. It is from 0 to 255. But in case of 0, that is not

displayed on screen. It is always displayed even though whole Operating OSD is disappeared on the screen. But it is possible to make non display and to choose display position (BOTTOM RIGHT, TOP RIGHT, TOP LEFT) by RS-232C communication.

CAMERA ID 0 ~ 255

caution

1. In case of Camera ID FIX model, it cannot be selected..
2. ID is not changed by MENU control through communication.

② DISPLAY MODE

: Choose which is to display Camera ID or Title.

DISPLAY CAM ID → TITLE →

③ DISPLAY POSITION

: Choose where is to display Camera ID or Title on Right Bottom, Left Top, Right Top or not to display.

POSITION R.BOT → L.TOP → R.TOP → NONE

④ Title

: It is the name of Camera. It enters 10 characters including blank..

TITLE: ■■■■■■■■■■

■ **How to Enter the Title** ■

Let's enter the Title as "R1", example

- Select the position of title character by using (+) or (-) key. The chosen position is blinking.

TITLE: □ ■■■■■■■■■■

- Select the character "R" among (b) ~ (i) by using UP,DOWN, (+),(-) key. The chosen character "R" is blinking.

7 89ABCDEF
NPQRSTUVWXYZ
e f g h i j k l m

- Press MENU key, the character "R" is entered in the Title.

TITLE: R ■■■■■■■■■■

- Select the next position of title character by using (+) or (-) key. The chosen position is blinking.

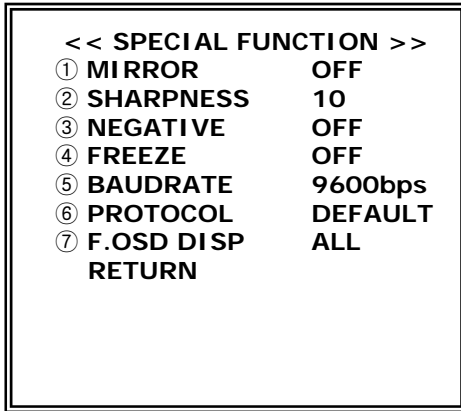
TITLE: R □ ■■■■■■■■■■

- Select the character "7" among (b) ~ (i) by using UP,DOWN, (+),(-) key. The chosen character "7" is blinking.

7 89ABCDEF
NPQRSTUVWXYZ
e f g h i j k l m

- Press MENU key, the character "7" is entered in the Title.

TITLE: R 7 ■■■■■■■■■■



<Fig5-12. SPECIAL FUNCTION >

5.12 SPECIAL FUNCTION

① Mirror Mode
: Mode ON is Mirror Mode, OFF is general screen state.
MIRROR OFF → H MIRROR → V MIRROR → FLIP

② Sharpness
: Use to change the contour of Scene.
SHARPNESS 0 ~ 15

③ Negative Mode
: Use for Positive and Negative mode. ON is Negative mode,
OFF is Positive mode namely general screen state.
NEGATIVE OFF → ON →

④ Freeze Mode
: It pause current image. ON is to stop, OFF is to return
to normal state.
FREEZE ON → OFF →

caution
1. Freeze image is not saved after Power OFF / ON .
That's why it doesn't have memory for saving.

⑤ BAUD RATE
: Use to communicate through RS232C, RS485, RS232TTL .
BAUDRATE 4800bps → 9600bps → → 312kbps

caution
1. When Baud Rate of Camera and external system is not
same, it happens Communication fail.

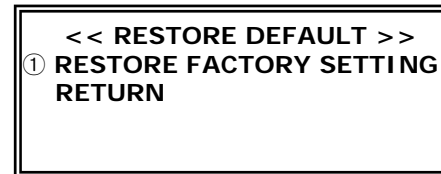
⑥ PROTOCOL
: Use to communicate through RS232C, RS485.
PROTOCOL DEFAULT → VCL → KD6 → P/D →

⑦ Function OSD Display
OSD DISP ALL → NONE → TOP → BOTTOM →
ALL : Whole Function OSD display
(Focus Mode, Key state, Zoom Ratio, ID)
TOP : Only Upper OSD display (Focus Mode, key state)
BOTTOM : Only Lower OSD display (Zoom Ratio, ID)
NONE : Whole Function OSD display not.

5.13 FACTORY DEFAULT

: All changed data are returned to shipping condition.
For Initialization, select "RESTORE FACTORY SETTING" and
push MENU key.

caution
1. Keep in mind that this mode return all changed data to
shipping condition.
2. Some menu as ID, TITLE, etc are not initialized.

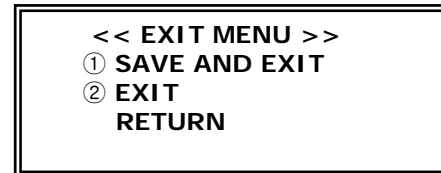


<Fig5-13. RESTORE DEFAULT>

5.14 EXIT MENU

① SAVE AND EXIT
: Exit OSD MENU with saving all changed data.

② EXIT
: Exit OSD MENU without saving all changed data.

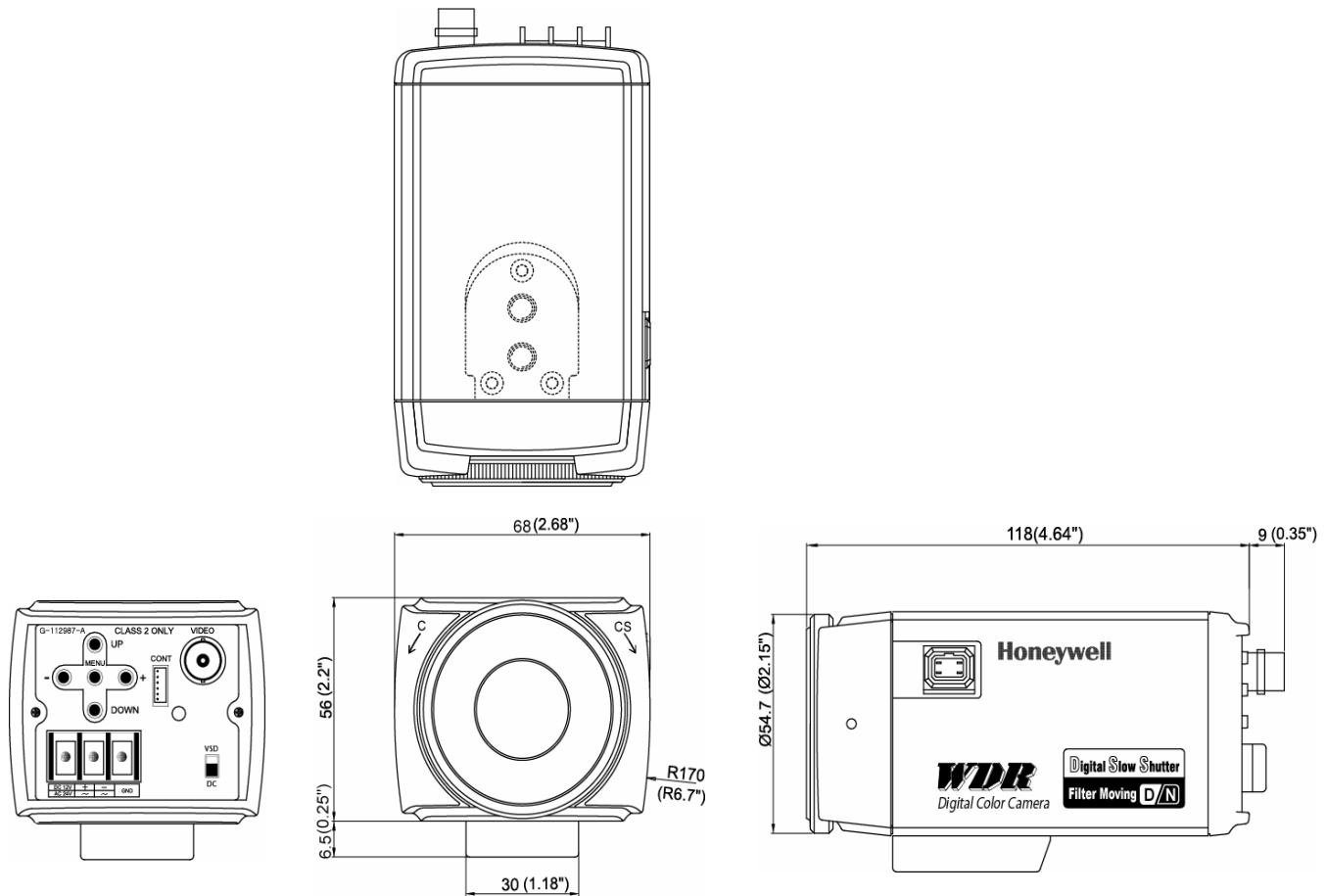


<Fig5-14. EXIT MENU>

6. Specifications

Model Name	HCC-745NTW	HCC-745PTW
Pick-up Device	1/3" Sony Double Scan Color CCD	
Total/Effective Pixels	410,000 / 380,000	470,000/440,000
Scanning System	525 lines, 2:1 Interlace	
Digital Zoom Ratio	X1.0 ~ x2.5 can be adjustable	
Sync System	Internal / External (L/L), Auto detecting selectable	
H.Resolution	480 TV lines	470 TV lines
S/N Ratio	more than 50 dB (AGC OFF)	
Min. illuminance	0.2lx @50IRE, AGC 38dB, Night OFF; 0.01lx @50IRE, AGC 38dB, Night OFF, DSS 510fields; 0.01lx @50IRE, AGC 38dB, Night ON; 0.001lx @50IRE, AGC 38dB, Night ON, DSS 510fields;	
Brightness	0 ~ 99 adjustable	
Shutter Speed	1/60 ~ 1/10,000	1/50 ~ 1/10,000
Field Integration	x2 ~ x510 adjustable	
Mirror	Horizontal / Vertical / Flp (Horizontal + Vertical)	
Day & Night Mode	ON / OFF / AUTO	
Privacy Zone	ON (up to 8 Zones) / OFF	
AGC	ON (8 ~ 38dB) / OFF	
White Balance	ATW / AWC / OnePush / Indoor / Outdoor / MWB / User / Fluorescent	
BLC / WDR	BLC : ON / OFF, WDR : ON / OFF	
Remote Control	RS-232C (basic) / RS-485 (option)	
Power Supply/Consump.	DC12V ± 2V,AC24V ±10% (5.0 W)	
Operation/Storage Temp.	-10 ~ 60 °C (Recommended -5 ~ 50 °C) / -20 ~ 60 °C	
Dimension / Weight	68 x 56 x 120 (mm) / less than 410g	

7. Dimension



MEMO

Honeywell

Honeywell Co., Ltd.
Address : 17F, Kukje Center Building 191,
Hankangro -2ga, Yongsan-gu,
Seoul 140-702, Korea
Phone : 82-2-799-6109, 6108, 6107, 6292
Fax : 82-2-749-6119

[http : //www.honeywell.co.kr/security/english](http://www.honeywell.co.kr/security/english)
E-mail : info.security@honeywell.com

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