

Honeywell

Color CCD Camera

NTSC PAL

HCC484TP

HCC484TPX

User Guide

Revisions

Issue	Date	Revisions
1.00	03/06	New document



Explanation of Graphical Symbols



This symbol indicates 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.



This symbol indicates the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

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

Warnings

Installation and servicing should be performed only by qualified and experienced personnel.

For outdoor applications, use an appropriate protecting housing conforming to IP65.



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

Safeguards

This camera is designed for use in general-purpose indoor CCTV applications and no other purpose.

Only operate your camera between the temperature of -10°C to $+50^{\circ}\text{C}$ (14°F to 122°F).

Do not operate your camera outside its specified power supply range.

Camera must only be used in clean, dry, dust-free environments unless housed in suitable protective housings to IP65 or better.

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.

Manufacturer's Declaration of Conformance

The manufacturer declares that the equipment supplied with this guide is compliant with the essential protection requirements of the EMC directive 89/336/EEC and the Low Voltage Directive LVD 73/23 EEC, conforming to the requirements of standards EN 55022 for emissions.

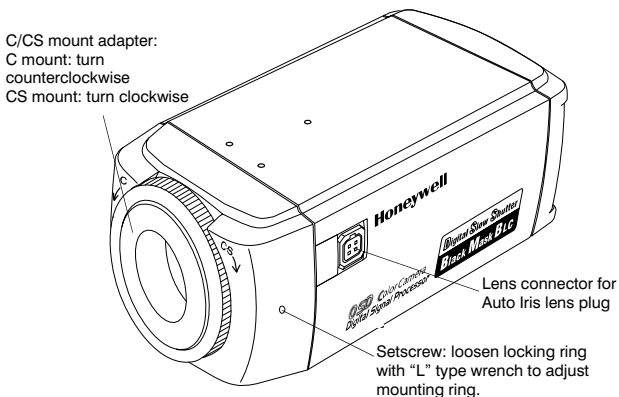
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Introduction

The Honeywell HCC484TP is a low light CCD color camera with digital slow shutter, UTP and RS485 remote control.

Figure 1 Camera Overview



Features

- 1/3" IT Super HAD CCD
- Outstanding BLC implementation with Honeywell's BMB (Black Mask BLC) function
- C/CS adjustable lens mount adapter
- Excellent signal-to-noise ratio of more than 50 dB
- High sensitivity: minimum illumination of 0.001 lux (F1.2, 30 IRE, DSS x 128)
- 2-way Auto Iris: Video Iris or Direct Drive (DC) Iris lens
- OSD control
- External synchronization with line lock and auto detection
- RS485 remote control

Before You Begin

Please read this guide carefully before you install the HCC484TP camera.

Keep this guide for future reference.

Unpack Everything

Check that the items received match those listed on the order form and packing slip. The HCC484TP packing box should include, in addition to this User Guide:

- One HCC484TP camera
- One 4-pin connection cable
- One L-type wrench
- One Auto Iris lens plug

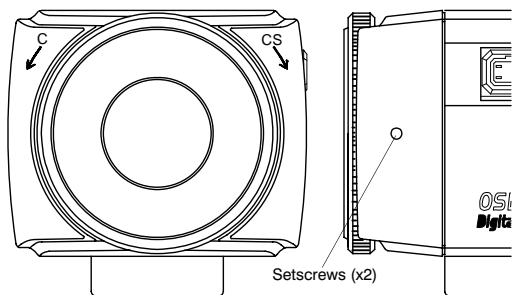
If any parts are missing or damaged, contact the dealer you purchased the camera from or call Honeywell Customer Service (see *Contact Information* on the back of this manual).

Lens Installation

Installing a C/CS Mount Lens

1. Remove the protective cap from the front of the camera.
2. Adjust the C/CS mount ring for either C or CS mount.
 - a. Loosen the setscrews using the L-type wrench supplied.
 - b. Turn the mount ring counterclockwise for a C-mount lens or clockwise for a CS-mount lens.
 - c. Tighten the setscrews.
3. Press the threaded portion of the lens mount against the threaded portion of the camera mount and slowly screw the lens clockwise until secure.

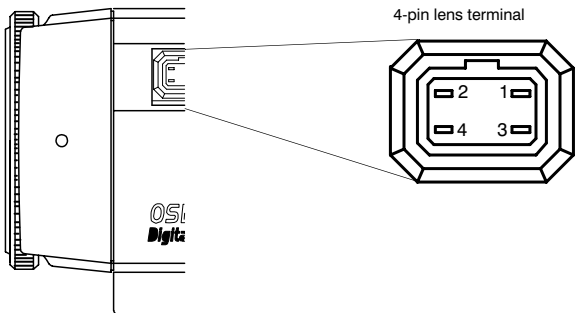
Figure 2 C/CS Mount



Installing an 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.

Figure 3 Auto Iris Lens Pin Definition



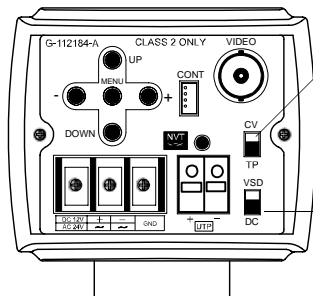
Pin	DC (Direct Drive) lens	Video (VSD) lens
1	CTRL -	Power (+12V)
2	CTRL +	NC
3	DRV +	Video Signal
4	DRV -	GND

- Set the EE MODE to ALC MODE on the OSD menu (see *ELC / ALC Mode on page 13*).

Auto iris lens with amplifier: Set the VSD LENS on the OSD menu.

Auto iris lens with no amplifier: Set the DC LENS on the OSD menu. Adjust to the LEVEL carefully to avoid hunting.

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



Video Output Selection Switch:
Set to **CV** for Composite Video.
Set to **TP** for UTP Video.

Set to **VSD** for an auto iris lens with a built-in amplifier (video-type lens).
Set to **DC** for an auto iris lens without an amplifier (DC-type lens).

Auto iris lens: Use the connection recommended by the manufacturer. For best practices, read the lens manual carefully. You may need to set the flange back focus.

Adjusting the Flange Back Focus

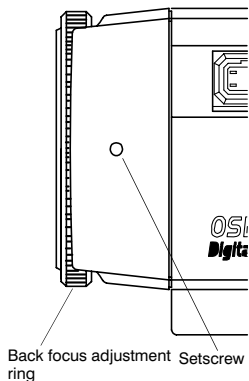
Fixed Lens

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

Zoom Lens

1. Loosen the setscrew and set the lens to the maximum telephoto position.
2. Turn the back focus adjustment ring to adjust the focus.
3. Auto iris lens: Aim the camera at a comparatively dark object or reduce the ambient light so that the iris is fully open.
4. Set the lens to its maximum wide angle position, then set the focus.
5. Repeat steps 2, 3 and 4 until the difference between the focusing positions is as small as possible.
6. Tighten the setscrew when the best focusing point is found.

Figure 4 **Flange Back Focus**



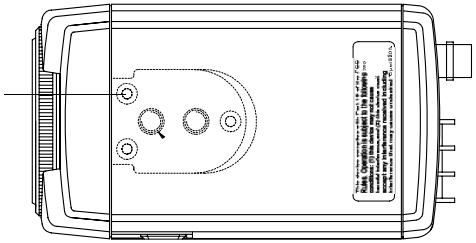
Mounting the Camera

Mounting points are provided on the top of the camera for mounting the camera on a bracket or tripod. They are designed to accept standard sized mounting bolts. This bracket can be unscrewed and mounted onto the opposite side of the camera, depending on your application. The mounting bracket must be capable of supporting the weight of the camera and its lens.

Note Some installation codes dictate that the mounting bracket must be capable of supporting up to four times the combined weight of the camera and lens.

Figure 5 Camera Mount

Unscrew 3 bracket securing screws and then resecure the bracket on the other side of the camera.



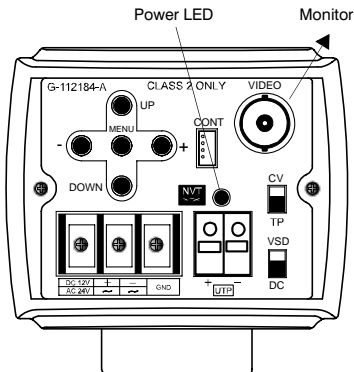
Connecting the Camera

Note Check the power source from the external power supply before applying power to the camera.

1. Connect the VIDEO connector on the rear of the camera to the video-in connector on your monitor.
2. Connect the camera to a 12 VDC or 24 VAC power supply (appropriate for your installation).
3. Plug in the power supply. The power LED illuminates to show that the camera is receiving power. If it does not illuminate, check the connections and the power source.

WARNING! The use of a CSA Certified/UL Listed Class 2 power supply is required to ensure compliance with electrical safety standards.

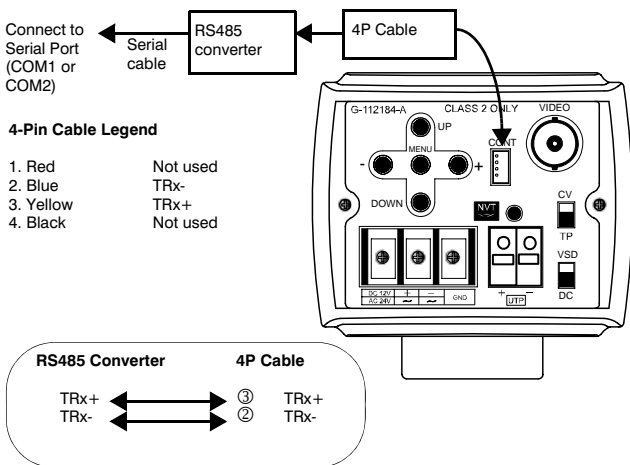
Figure 6 Camera Connections



Remote Control Connections

The HCC484TP can be controlled remotely using an RS485 connection.

Figure 7 Camera Connection via RS485



Remote Access Software Program On your PC (optional). Connect with cable through the serial port on your PC to simulate task buttons for configuration.

Programming

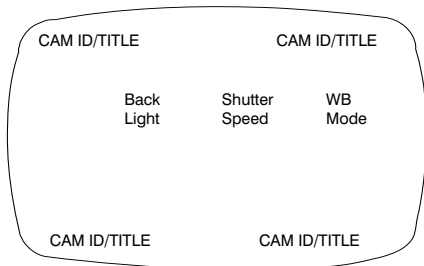
Understanding the On-Screen Display

Press **MENU** briefly to confirm the current operation setup. The information (see *Figure 8*) will disappear after a few seconds if there is no button action.

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:

- With external communication, change the display position. Options are: Bottom right, Bottom left, Top left, Top right, Non display.

Figure 8 **OSD Information Display**



Note 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 RS485 connection.

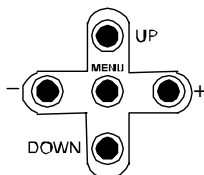
On-Screen Display

Use the OSD (On-Screen Display) to program the camera.

1. Press and hold the **MENU** (center) button for 2 seconds to display the Setup menu.
2. Press the **UP** or **DOWN** buttons to select a menu item.
3. Press the **MENU** button to enter the selected submenu.

4. Press the + or – buttons to increase/decrease the value of the selected item.

Figure 9 OSD Menu Controls



Saving your Settings

First Method: When you are satisfied with your settings:

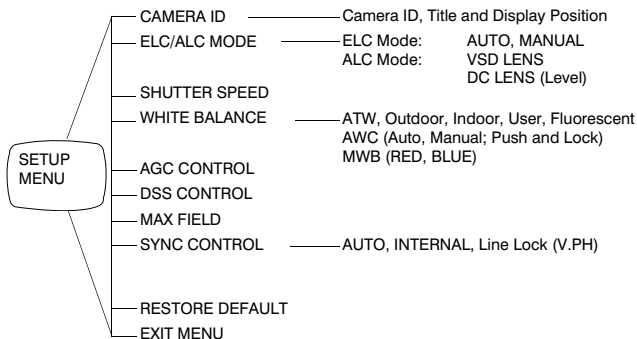
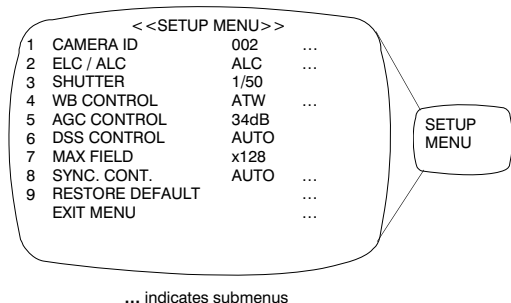
1. Press **MENU** for two seconds. The SETUP Menu is replaced by one of two messages:
SAVE? displays when values have been changed. Selecting **SAVE** exits Setup mode and saves your changes.
QUIT? displays when you have not changed any settings. Selecting **QUIT** exits Setup mode without saving any changed values.
2. Press + or – to select **SAVE** or **QUIT** and press **MENU** to exit the Setup mode. Press the UP or DOWN buttons to cancel the **SAVE/QUIT** and return to the SETUP MENU.

Second Method: Select **EXIT MENU** on the SETUP MENU, press **MENU**, and select **SAVE AND EXIT** to save the changed settings and exit the menu. Select **EXIT** to exit without saving the settings.

OSD Menu Structure

The HCC484TP menu system consists of one main SETUP MENU (see *Figure 10*) for easy camera programming.

Figure 10 Menu Structure



SETUP MENU Functions

Menu Item	Option	Description
① CAMERA ID	000 (off), 001 ... 255	ID set to 0 will turn ID display off.
② ELC / ALC Mode	ELC ... ALC ...	See <i>ELC / ALC Mode</i> for more information.

Menu Item	Option	Description
③ SHUTTER SPEED	1/60 NTSC (1/50 PAL) FL 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/30000, 1/50000	Adjust brightness with high shutter speed. Flicker This field is not adjustable when the camera is set to ELC MODE. Auto is selected by default.
④ WB CONTROL (White Balance)	ATW AWC MWB	White balance mode, auto and manual. Preset white balance modes include INDOOR, FLUORESCENT, USER and OUTDOOR.
⑤ AGC CONTROL	OFF 10 dB 12 dB ... 38 dB	Adjust maximum value of AGC gain. If the DSS CONTROL (Sensitivity UP) Mode is set to AUTO or FIX, you can adjust the AGC from 18 dB to 38 dB.
⑥ DSS CONTROL	OFF AUTO FIX	Compensate for low illumination. Adjust the maximum integration fields to get a brighter dynamic image. The scene will be slower than when set to OFF.
⑦ MAX FIELD CONTROL	OFF x2, x4, x6, x8, x10, x16, x32, x64, x128	The larger this field, the greater the noise of the image. For more dynamic range, adjust the MAX FIELD and increase the AGC CONTROL setting.

Menu Item	Option	Description
⑧ SYNC CONTROL	AUTO INT L/L	See <i>Sync Control Setup</i> for more information.
⑨ RESTORE DEFAULT	RESTORE DEFAULT SETTINGS	Restore the factory default settings. If you have not made any changes, you will not be able to select this setting.

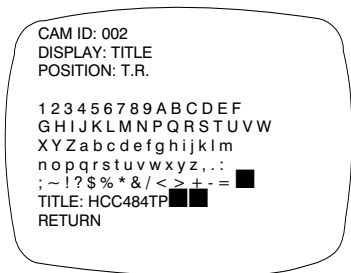
Adding a Camera Title Display

To add a camera title:

1. Enter the SETUP MENU, select **CAMERA ID** and press **MENU**.
2. Use the **UP**, **DOWN**, **+**, **-** buttons to select a character in the **TITLE** to start editing with.
3. When the position is set, use the **UP**, **DOWN**, **+**, **-** buttons to move between the alphanumeric characters. When the desired character is blinking, press **MENU** to accept it. The character appears in the title at the bottom of the screen. The cursor will automatically highlight the next position in the **TITLE**.
4. Repeat step 2 until your camera title is complete.
5. Use the **+** and **-** buttons to change the **DISPLAY** field to **TITLE**.
6. Select **RETURN** and press **MENU** to accept your changes and return to the main SETUP MENU.

Note For remote control using RS485 connection, you can select either Camera ID or Title to display.

Figure 11 Adding Camera Title



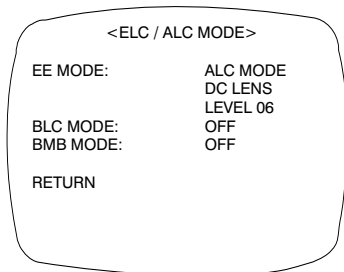
CAMERA ID Menu Functions

Menu Item	Option	Description
CAM ID	OFF, 001 ... 255	The number assigned each camera in your network, from 000 to 255. When set to 000 the ID is not displayed on the screen.
DISPLAY	TITLE, ID, OFF	Select what is displayed on the screen (Camera TITLE , ID or nothing).
POSITION	T.R., B.R., B.L., T.L., NO DISP	Select where you want the Camera ID or Title to appear on the display (Top Right, Bottom Right, Top Left, Bottom Left and No Display).
TITLE		Enter a name for the camera, maximum 10 characters, including spaces.
RETURN		Press MENU to return to the main SETUP MENU.

Setting the Camera Lighting Optimization

ELC / ALC Mode

Figure 12 Setting Camera Lighting



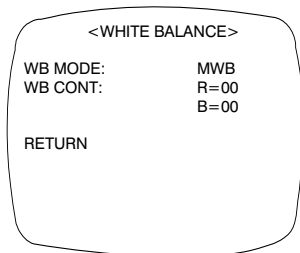
To set the lens mode, back light compensation and black mask:

Menu Item	Option	Description
EE MODE: ELC MODE	AUTO MANUAL	For a manual (fixed) lens: AUTO: Iris operates electronic exposure automatically. MANUAL: Adjust the iris by changing the high shutter speed manually.
EE MODE: ALC MODE	VSD LENS DC LENS	For an automatic iris lens: VSD: Select for video-type lens. DC LENS: Select for direct drive-type lens. Adjust the LEVEL until the image is neither too bright nor too dark.
Backlight Compensation BLC MODE	OFF LOW BL MID. BL HIGH BL	Prevents the object in the center of the image from darkening when there is excessive light from behind. Note When BLC MODE is set, BMB MODE is disabled.
Black Mask BMB MODE	OFF L. GRAY D. GRAY BLACK	Another function of BLC that masks excessive light to a dark level and makes the image brighter so the object is clear. Note When BMB Mode is set, BLC MODE is disabled.
RETURN		Press MENU to return to the SETUP MENU.

White Balance Control Setup

To set how the camera tracks to accept different lighting conditions within the color range of 2800°K to 8000°K:

Figure 13 White Balance Control

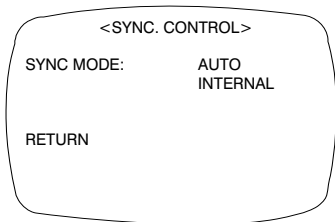


Menu Item	Description
ATW (Auto Trace White Balance Mode)	Feedback system that automatically aligns the white balance (2800°K to 8000°K).
AWC (Auto White Balance Control Mode)	Performs faster action than ATW mode without an operating range. Options are: AUTO: AWC operates all the time MANUAL: PUSH = Press to start the AWC operation MANUAL: LOCK = Release key to fit the present shooting scene's white balance
INDOOR	General indoor scenes preset (3200°K).
FLUORESCENT	Office environments with fluorescent or tungsten lighting. Provides lowest dynamic range of all presets (4200°K).
USER FIXED	Preset (4700°K)
OUTDOOR	Preset for outside environments and high-contrast scenes where the camera is focused on the darker (6300°K).
MWB (Manual Mode)	RED: 0 – 20 BLUE: 0 – 20
RETURN	Press MENU to return to the SETUP MENU.

Sync Control Setup

To synchronize the vertical interval sync pulse of your camera with other equipment to reduce the effect of picture roll on the monitor.

Figure 14 Sync Control Setup

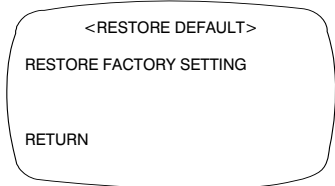


Menu Item	Description
INTERNAL	When line lock is not required.
LINELOCK	Adjust the proper phase: V.PH: 000 – 300 (factory default is 0)
RETURN	Press MENU to return to the SETUP MENU.

Restore Factory Default Settings

To reload the factory default settings on the camera.

Figure 15 Restoring Default Settings

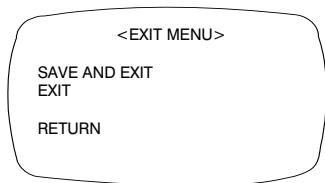


Menu Item	Description
RESTORE	Press MENU to Reload the factory default camera settings. This action replaces all user-defined settings.
RETURN	Press MENU to return to the SETUP MENU.

Exit Setup Menu

To exit the SETUP menu.

Figure 16 **Exit Menu**



Menu Item	Description
SAVE AND EXIT	Press MENU to save your changes and exit.
EXIT	Press MENU to quit without saving your changes.
RETURN	Press MENU to return to the SETUP MENU.

Specifications

Camera	HCC484TP (NTSC)	HCC484TPX (PAL)
Imaging device:	1/3" CCD (total 410,000 pixels)	1/3" CCD (total 470,000 pixels)
Effective pixel:	768 (H) x 494 (V) (380,000 pixels)	752 (H) x 582 (V) (440,000 pixels)
Scanning system:	525 lines, 2:1 interlace	625 lines, 2:1 interlace
Sync system:	Internal, Linelock, Auto	Internal, Linelock, Auto
Scanning frequency:	15.734 KHz (H) 59.94 Hz (V)	15.625 KHz (H) 50.0 Hz (V)
Resolution:	480 TV Lines	
Video out:	VBS 1.0 Vp-p / BNC	
S/N ratio:	more than 50 dB	
Minimum illumination:	less than 0.1 lux (F1.2, 30 IRE, AGC ON) DSS ON 0.001 lux (x128 fields)	
BLC:	OFF, Low, Middle, High	
BMB:	OFF, Light Gray, Dark Gray, Black	
White balance:	1/60s ~ 1/50,000s (10 steps)	1/50s ~ 1/50,000s (10 steps)
AGC:	OFF ~ 38 dB	
ALC:	EE, VSD, DC	
Lens mount:	C/CS mount	
Power source:	24 VAC \pm 20%, 12 VDC \pm 2V, Max 3W	
Operating temperature:	14°F ~ 122°F (-10°C ~ +50°C)	
Storage temperature:	-4°F ~ 158°F (-20°C ~ +70°C)	
Enclosure		
Dimension: (W x H x D)	2.7 in. x 2.2 in. x 4.7 in. (68 mm x 56 mm x 120 mm)	
Weight:	13 oz. (380 g)	

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