

EQ900 eZ.HD Series

720p Analog High Definition

True Day/Night Box Camera

User's Manual



**** Lens not included.**



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Precautions

Please read this manual first to ensure correct installation and operation. This manual should be retained for future reference. The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

1. Do not install the camera near electric or magnetic fields.

Install the camera away from TV / radio transmitters, magnets, electric motors, transformers and audio speakers, because the electromagnetic fields generated by these devices may distort the video image or otherwise interfere with camera functions.

2. Never disassemble the camera beyond the recommendations in this manual, nor apply materials to it other than those recommended herein.

Improper disassembly or introduction of corrosive materials may result in equipment failure or other damage.

3. Try to avoid pointing the camera toward the sun.

In some circumstances, direct sunlight may cause permanent damage to the sensor and / or internal circuits. It may also create unbalanced illumination that may be beyond the camera's ability to compensate.

4. Keep the power cable away from water and other liquids. Never touch the power cable with wet hands.

Touching a wet power cable with your hands or touching the power cable with wet hands may result in electric shock.

5. Never install the camera in areas exposed to oil, gas or solvents.

Oil, gas or solvents may cause equipment failure, electric shock or, in extreme cases, fire.

6. Cleaning

For cameras with interchangeable lenses, do not touch the surface of the sensor directly with your hands. Use lens tissue or a cotton tipped applicator and ethanol to clean the sensor and the camera lens. Use a damp soft cloth to remove any dirt from the camera body. Do not use complex solvents, or corrosive or abrasive agents to clean any part of the camera.

7. Do not operate the camera beyond the specified temperature, humidity and power source levels. This camera is suitable for indoor operation only.

Use the camera at temperatures within $-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$ ($14^{\circ}\text{F} \sim 122^{\circ}\text{F}$) and humidity between $20 \sim 80\%$; this device is not rated as submersible. The input power source should be 12VDC or 24VAC. **The use of a properly fused or "Class 2 Limited Power Source" power supply is highly recommended.**

8. Mounting

Select a solid mounting surface that will support the weight of the camera and any additional loading from wind, snow, ice or other factors. Securely attach the camera to the mounting surface using screws and anchors that will properly support the camera. If necessary, (e.g. when mounting the camera to a drop ceiling, or unsupported ceiling) use a safety wire to provide additional support for the camera.

Safety Notice

Federal Communication Commission Interference Statement

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 in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



ATTENTION! This is a class A product which may cause radio interference in a domestic environment; in this case, the user may be urged to take adequate measures.



This Product is RoHS compliant.



WEEE

Your EverFocus product is designed and manufactured with high quality materials and components which can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste. Please, dispose of this equipment at your local community waste collection/recycling centre. In the European Union there are separate collection systems for used electrical and electronic product.

Please, help us to conserve the environment we live in!

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1. Introduction

The EQ900 is a box camera equipped with 1/2.8" SONY 1.37M pixels CMOS to deliver 720p high Resolution. The camera delivers vastly superior video quality compared to traditional CCTV images. This superior resolution not only captures more critical evidentiary information, but the inherent ability for video also extends the area of coverage, expedites completion of investigations, resolves complaints and reduces both capital and operational costs.

The EQ900 provides 3D Noise Reduction to improve picture clarity while enabling DVRs to improve disk storage utilization. Full suite of OSD menu options controlled from the built-in function buttons. Digital Wide Dynamic Range expansion to deliver properly exposed images despite bright light sources, deep shadows and/or unbalanced lighting in the same scene. Allows flexible choices of manual & DC iris control lenses with C / CS mount for outstanding coverage in a wide range of demanding surveillance environments while delivering stunning image quality. The EQ900 supports both NTSC and PAL scanning systems, which can be switched via OSD.

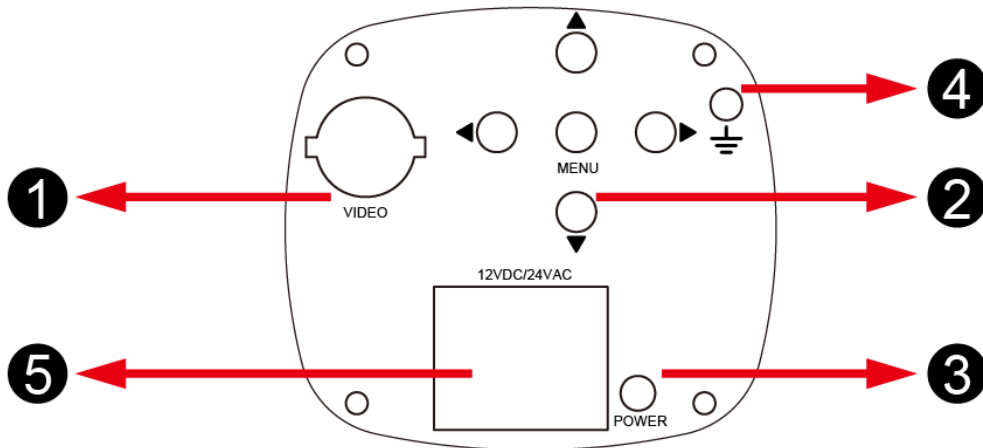
1.1 Packing List

- Camera Body x 1
- DC Power Pigtail Cable x 1
- User Manual x 1
- Hexagon Wrench x 1
- C-mount Lens Adapter x 1

1.2 Features

- 720p with high flexibility and performance for astounding image
- 1/2.8" SONY 1.37M pixels CMOS with very low light sensitivity
- Support C/CS Mount
- D-WDR to improve the visibility under high contrast scene
- Provides 3D- Noise Reduction ensures less blurry moving subjects, vivid and high SN ratio images even under low light environments
- Support 720p & 960H analog signal output, which can be easily switched by OSD

2. Overview



No.	Name	Descriptions
1	Dual Video Output	720p and 960H output, using a 75 Ohm BNC-type coaxial cable.
2	OSD Menu	Use the function buttons to configure the settings in the OSD menu.
3	Power LED	Glow red then power is present.
4	Grounding Stud	Ensure a good grounding when used.
5	Power Input Terminal	Connect to 12VDC/24VAC power source.

3. Installation

3.1 Lens Installation and Adjustment

You can install either a CS-mount or a C-mount lens into the camera. It is recommended to use a lens with aperture ratio of F/1.2 or lower. Please refer to the following steps.

CS-Mount Lens:

1. Remove the **Cover Cap** from the **Camera Body**.
2. Install the lens into the **Camera Body**.
3. Adjust the lens using the Focus / Zoom Screws.

C-Mount Lens:

1. Remove the **Cover Cap** from the **Camera Body**.
2. Install the lens into the **Camera Body** using the supplied **C-Mount Lens Adapter**.
3. Adjust the lens using the Focus / Zoom Screws.

If you are using a **DC Auto Iris lens**:

1. Remove the **Cover Cap** from the **Camera Body**.
2. Install the lens into the **Camera Body**.
3. Connect the DC Iris Cable to the DC Auto Iris Lens Connector.

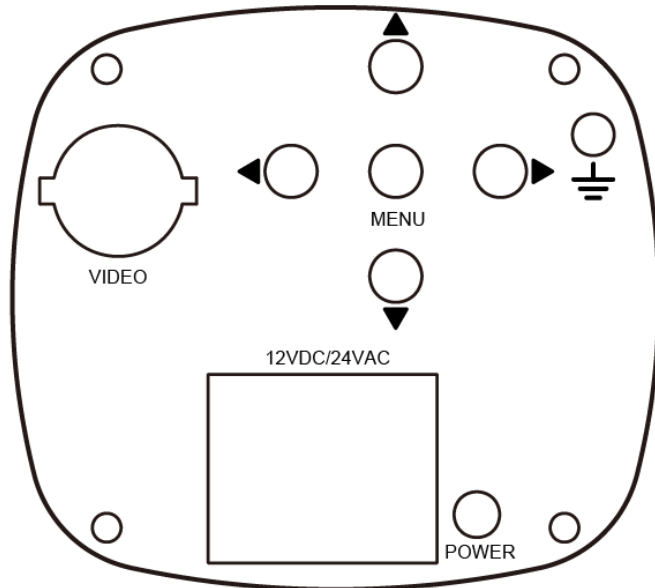
Warning: Installing a C-mount lens without the C-mount lens adapter may damage the camera sensor.

3.2 Top / Bottom-Mount

You can use a mounting bracket and screw it on the top of the **Camera Body** to suspend the camera, or on the bottom of the **Camera Body** to support the camera.

4. Basic Connection

1. Connect the camera to a 12VDC or 24VAC power source using the supplied **DC Power Pigtail Cable**. The power LED will be lit in red.
2. Configure the OSD Menu, using the function button.



Note: The function button is not only for direction control, also for switching Video format and Video output. Please follow the detailed instruction as below:

- ✧ Press the "down" button key over 5s to switch video format from PAL to NTSC.
 - ✧ Press the "left" button key over 5s to switch video output from 720p to 960H (720p is the default).
 - ✧ Press the "right" button key over 5s to switch video output from 960H to 720p.
3. Connect the camera to an AHD DVR or a monitor for setting image aim and focus before mounting the camera.

5. OSD Menu Structure

The default value is marked with a star “*”.

No.	Main	Sub Menu	Sub Menu / Function			
1	Lens	DC*	Indoor*		Min Shu.	NTSC: 1/30*
						PAL: 1/25*
			Outdoor		Max. Shu.	NTSC: 1/60,FLK,1/240, 1/480,1/1000, 1/2000,1/5000*, 1/10000, 1/50000
						PAL: 1/50,FLK,1/200, 1/400,1/1000, 1/2000,1/5000*, 1/10000, 1/50000
		Iris Speed	0 – 15(0*)			
Manual						
2	Exposure	Shutter	NTSC: 1/30, 1/60, FLK, 1/240, 1/480, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, X2, X4, X6, X8, X10, X15, X20, X25, X30, Auto*			
			PAL: 1/25, 1/50, FLK, 1/200, 1/400, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, X2, X4, X6, X8, X10, X15, X20, X25, X30, Auto*			
		AGC	0 – 15(15*)			
		Sens-up	Off*			
			Auto	Sens-up	X2, X4*, X6, X8, X10, X15, X20, X25, X30	
		Brightness	1-100(40*)			
		D-WDR	Off*			
			On	Level	0-8(8*)	
			Auto			
		Defog	Off*			
Auto	Pos/Size		Position, Size, ↑, ↓, →, ←			
	Gradation		0-2(0*)			
Default						
3	Backlight	Off*				
		BLC	Level	Middle*, High, Low		
			Area	Position, Size, ↑, ↓, →, ←		

			Default				
		HSBLC	Select	Area1*, Area2, Area3, Area4			
			Display	Off			
				On*	Position, Size, ↑, ↓, →, ←		
			Black Mask	On*/Off			
			Level	0-100(20*)			
			Model	All Day*			
				Night	AGC Level	0-255(48*)	
Default							
4	White Balance	ATW*					
		AWC→SET					
		Indoor					
		Outdoor					
		Manual	Blue	1-500(50*)			
			Red	0-100(50*)			
		AWB					
5	Day & Night	Ext	D→N(Delay)		0-60(1*)		
			N→D(Delay)		0-60(1*)		
		Auto*	D→N(AGC)		1-255(240*)		
			D→N(Delay)		0-60(1*)		
			N→D(AGC)		1-255(50*)		
			N→D(Delay)		0-60(5*)		
		Color					
		B/W	Burst	Off*/On			
				Off*			
			IR Smart	On	Level	0-15(4*)	
				Area	Position, Size, ↑, ↓, →, ←		
IR PWM	Off						
	0-100(100*)						
6	NR	2DNR	Middle*/Low/Off/High				
		3DNR	Middle*/Low/Off/High				
7	Special	Cam Title	Off*				
			On	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ▶→← ↑ ↓ () ^ _ █ /=&:~,.			
		D-effect	Freeze	Off*/On			
			Mirror	Off*, Mirror, V-flip, Rotate			

		Neg. Image	Off*/On			
	Motion	Off*				
		On	Select	Area1*,Area2,Area3,Area4		
			Display	On*	Position, Size, ↑, ↓, →, ←	
				Off		
			Sensitivity	0-100(64*)		
			Color	Green*, Blue, White, Red		
			Trans	1.00*,0.75,0.50, 0.25		
			Alarm	View Type	Off, Block, Outline, All*	
				OSD View	On*/Off	
				Alarm Out	On*/Off	
				Alarm Sig	High*, Low	
		Time		1-15(3*)		
		Default				
		Privacy	Off			
			On	Select	Area1*,Area2,Area3,Area4	
	Display			Off		
				Color*	Position, Size, ↑, ↓, →, ←	
				Mosaic	Position, Size, ↑, ↓, →, ←	
				Inv	Position, Size, ↑, ↓, →, ←	
	Color		White*, Black, Red, Blue, CYAN, Yellow, Green			
	Trans		1.00*,0.75,0.50, 0.25			
	Default					
	Language	ENG*/CHN1/CHN2/GER/FRA/ITA/SPA/POL/RUS/POR/NED/TUR				
	Defect	Live DPC	Off			
			On*	AGC level	0-255(65*)	
				Level	0-100(100*)	
		White DPC	On*	Off		
				Pos/Size	Position, Size, ↑, ↓, →, ←	
				Start	Close the iris then press	
				DPC View	Off*/On	
				Level	0-60(5*)	
		AGC	0-14(14*)			

			Sens-up	x2*, x4, x6, x8,x10, x15, x20, x25, x30			
				Black DPC	On	Off*	
						Pos/Siz	Position, Size, ↑, ↓, →, ←
						Start	Press Enter
						DPC View	Off*/On
		Level	0-255(255*)				
		RS485	CAM ID		0-255(1*)		
			ID Display		Off*/On		
			Baud Rate		2400,4800,9600,19200 ,38400		
		8	Adjust	Sharpness	Off		
Auto*	Level				0-10(6*)		
	Start AGC				0-255(50*)		
	End AGC				0-255(200*)		
CRT/LCD	CRT			Black Level	0-60(0*)		
				Blue Gain	0-100(50*)		
				Red Gain	0-255(50*)		
	LCD*			Gamma	User*,0.45,0.50,0.55,0.60,0.65,0.70,0.75, 0.80,0.85,0.90, 0.95,1.00		
				Blue Gain	0-100(50*)		
				Red Gain	0-100(50*)		
LSC	Off*/On						
Video. Out	PAL/NTSC						
9	Exit			Save& END /Reset/Not Saved			

6. Specifications

P/N	EQ900
Pickup Device	1/2.8" SONY 1.37M pixels CMOS
Video Format	NTSC and PAL(can be switched via OSD)
Effective Pixels	1280 (H)*720 (V)
Scanning System	Progressive Scan
Sensitivity	0.08 lux.
S/N Ratio	Over 48 dB (AGC OFF)
Electronic Shutter	AUTO, Manual (X30~1/ 50000), FLK
Video Output	BNC 1.0Vp-p 75Ω
Gamma Correction	0.45
Lens Type	C/CS Mount (lens sold separately)
BLC	OFF/BLC/HS BLC Selectable
AGC	0~15 Levels
White Balance	ATW/AWC-SET/INDOOR/OUTDOOR/MANUAL/AWB
Sync Mode	Internal
Day/Night	Ext, Auto, Color, B/W
IR LED	30 Units
IR Distance	Up to 30m/100ft. (depending on scene IR reflectivity)
OSD Languages	12-Language
DNR	2DNR/3DNR, Off
DEFOG	Off/Auto(under B/W mode)
D-WDR	On/Off
Sens-up	Off/On(x30~x2)
Mirror	Off, Mirror, V-flip, Rotate
Motion Detection	On/Off for 4 selectable zones
Privacy Mask	On/Off for 4 selectable zones
Environmental	IP66 Weather Resistant
Power Source	12VDC/24VAC
Operating Temperature	-10°C~50°C / 14°F~122°F
Humidity	20%~80%
Dimensions	129 x 58 x 55mm /5.08" x 2.28" x 2.17"
Weight	240g/0.53lbs
Certifications	CE/FCC/ RoHS

Specifications and designs are subject to change for improving the functionality of this product without notice.

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Ihr EverFocus Produkt wurde entwickelt und hergestellt mit qualitativ hochwertigen Materialien und Komponenten, die recycelt und wieder verwendet werden können. Dieses Symbol bedeutet, dass elektrische und elektronische Geräte am Ende ihrer Nutzungsdauer vom Hausmüll getrennt entsorgt werden sollen.

Bitte entsorgen Sie dieses Gerät bei Ihrer örtlichen kommunalen Sammelstelle oder im Recycling Centre.

Helfen Sie uns bitte, die Umwelt zu erhalten, in der wir leben!

