Color Zoom Camera

User Manual V2.2.0

Thank you for purchasing our product. If there are any questions, or requests, please do not hesitate to contact the dealer.

This manual applies to DS-2CZ2114P(N), DS-2CZ2132P(N), DS-2CZ2152P(N), DS-2CZ2152P-IRA, DS-2CZ2182P(N), DS-2CZ2192P(N), DS-2CZ2182P-WD, DS-2CZ2192P-WD zoom Cameras.

This manual may contain several technical incorrect places or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

DISCLAIMER STATEMENT

"Underwriters Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock or casualty hazards as outlined in UL's Standard(s) for Safety, UL60950-1. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product. UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT."

Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for 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.

FCC Conditions

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.

2. This device must accept any interference received, including interference that may cause undesired operation

EU Conformity Statement

CE This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Safety Warnings and Cautions

Please pay attention to the following warnings and cautions:

Hazardous Voltage may be present: Special measures and precautions must be taken when using this device. Some potentials (voltages) on the device may present a hazard to the user. This device should only be used by Employees from our company with knowledge and training in working with these types of devices that contain live circuits.

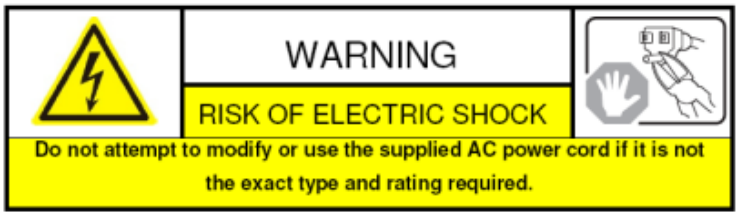
Power Supply Hazardous Voltage: AC mains voltages are present within the power supply assembly. This device must be connected to a UL approved, completely enclosed power supply, of the proper rated voltage and current. No user serviceable parts inside the power supply.

System Grounding (Earthing): To avoid shock, ensure that all AC wiring is not exposed and that the earth grounding is maintained. Ensure that any equipment to which this device will be

attached is also connected to properly wired grounded receptacles and are approved medical devices.

Power Connect and Disconnect: The AC power supply cord is the main disconnect device to mains (AC power).The socket outlet shall be installed near the equipment and shall be readily accessible.

Installation and Maintenance: Do not connect/disconnect any cables to or perform installation/maintenance on this device during an electrical storm.



Power Cord Requirements: The connector that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency in your region. The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, female connector. See the following website for more information http://kropla.com/electric2.htm.

Lithium Battery: This device contains a Lithium Battery. There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the vendor's instructions and in accordance with local environmental regulations.

Perchlorate Material: Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate. This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials. This device includes a battery which contains perchlorate material.

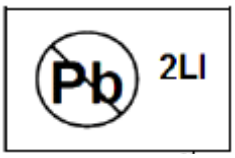
Taiwan battery recycling:

Please recycle batteries.

Thermal and Mechanical Injury: Some components such as heat sinks, power regulators, and processors may be hot; care should be taken to avoid contact with these components.

Electro Magnetic Interference: This equipment has not been tested for compliance with emissions limits of FCC and similar international regulations. This device is not, and may not be, offered for sale or lease, or sold, or leased until authorization from the United States FCC or its equivalent in other countries has been obtained. Use of this equipment in a residential location is prohibited. This equipment generates, uses and can radiate radio frequency energy which may result in harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is required to take measures to eliminate the interference or discontinue the use of this equipment.

Lead Content:



Please recycle this device in a responsible manner. Refer to local environmental regulations for proper recycling; do not dispose of device in unsorted municipal waste.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions"

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

Warnings

- Please adopt the power adapter which can meet the safety extra low voltage (SELV) request. And source with 12V DC according to the IEC60950-1 and Limited Power Source standard.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any

responsibility for problems caused by unauthorized repair or maintenance.)

- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all local codes.
- Please install blackouts equipment into the power supply circuit for convenient supply interruption.
- Please make sure that the ceiling can support more than 50(N) Newton gravities if the camera is fixed to the ceiling.

Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
- Do not aim the camera at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.

- The sensor may be burned out by a laser beam, so when any laser equipment is being used, make sure that the surface of the sensor will not be exposed to the laser beam.
- Do not place the camera in extremely hot or cold temperatures (the operating temperature should be between -10°C ~ 60°C, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Do not let water and any liquid flow into the camera.
- While shipping, the camera should be packed in its original packing, or packing of the same texture.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Table of Contents

1 Introduction

1.1 Product Features

DS-2CZ2114P(N), DS-2CZ2132P(N), DS-2CZ2152P(N), DS-2CZ2152P-IRA, DS-2CZ2182P(N), DS-2CZ2192P(N), DS-2CZ2182P-WD, DS-2CZ2192P-WD series are high performance cameras which adopt advanced print circuit board design technology, possess of high resolution, lower distortion, and lower noise features. They are extremely suitable for surveillance system and image process system.

- High performance SONY CCD.
- High resolution. This camera series provide high resolution up to Color 650TVL and B/W 700TVL for ensuring clear image.
- Low illumination. The 2132 camera model supports Day Night Auto Switch. The 2114/2152/2182/2192 camera models support IR cut filter with auto switch.
- The IR distance of the DS-2CZ2152P-IRA is up to 100M.
- Support RS-485 control and ZCF wiring control.
- BLC (Back light Compensation).
- Auto-focus algorithm with self-owned intellectual property.
- Support OSD menu and parameters configuration.
- High S/N ratio.
- Auto iris and auto electronic shutter.

- 3D-Digital Noise Reduction (3D-DNR).
- Electronic image stabilization (EIS).
- DS-2CZ2182/2192P-WD camera models support Wide Dynamic Range.

1.2 Function Summary

Motion Detection: In the user-defined motion detection surveillance area, the moving object can be detected and trigger alarm. The sensitive level can be customized according to the environment.

Privacy Mask: This function allows you to block or mask certain area of a scene, thus prevent the personal privacy from recording or live viewing.

Figure 1-1 Privacy Mask

DAY/NIGHT Auto Switch: The cameras deliver color images during the day. And as light diminishes at night, the cameras switch to night mode and deliver black and white images with high quality.

AGC: AGC is a control circuit that automatically changes the gain of a receiver or other piece of equipment, so that the desired output signal remains essentially. When under low illumination, AGC will regulate the gain and amplification of the video signal.

S/N ratio: It is the ratio of Signal voltage and noise voltage. The ratio is larger, the effect of noise is less, and the image is clearer.

OSD (On Screen Display): The on-screen display (abbreviated OSD) is an image superimposed on a screen picture, used for displaying information and menu.

Synchronous System: Synchronization of the camera usually contains power synchronization and internal synchronization. Internal synchronization is realized by the synchronous signal which is generated by the inside crystal oscillator.

White Balance: White balance can remove the unrealistic color casts. White balance is the white rendition function of the camera to adjust the color temperature according to the environment automatically.

ICR Auto Switch: The filter will filter infrared light during the daytime and change to normal filter at night to ensure a high sensitivity and clear image.

BLC: If you focus on an object against strong backlight, the object will be too dark to be seen clearly. The BLC (Backlight Compensation) function can compensate light to the object in the

front to make it clear, but this causes the over-exposure of the background where the light is strong.

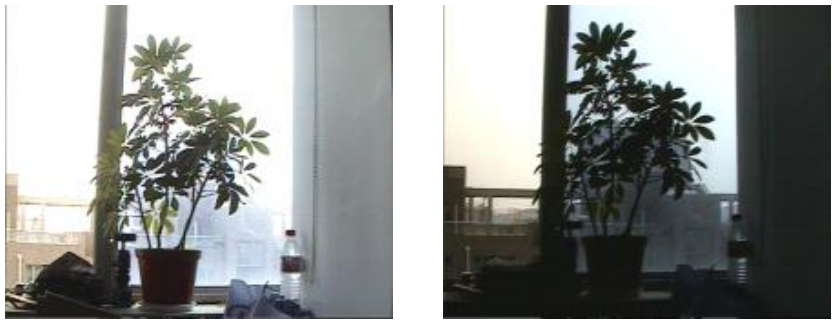


Figure 1-2 BLC OFF and BLC ON

WDR (Wide Dynamic Range): The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

EIS (Electronic Image Stabilization): Electronic image stabilization function can reduce certain ranges of vibration which is caused by the external environment.

3D Digital Noise Reduction: Comparing with the general 2D digital noise reduction, the 3D digital noise reduction function processes the noise initiated by CCD besides processing the noise in the separated Y video signal and C video signal.

1.3 Application

The product is applicable to the large-sized monitoring scenes, such as large warehouse, surrounding area of residential district, dock, plaza, school, station, park, etc.

2 Hardware Overview

2.1 Lens

The lens is integrated in the camera. The focal length of the 2132 camera is 3.9-85.8mm, the focal length of 2114 camera is 4.7-84.6mm, the focal length of 2152 camera is 3.84-88.4mm, the focal length of 2182 camera is 3.4-102mm and the focal length of 2192 camera is 3.3-119mm.

2.2 Side Panel

Figure 2-1 DS-2CZ2132P(N) Side Panel

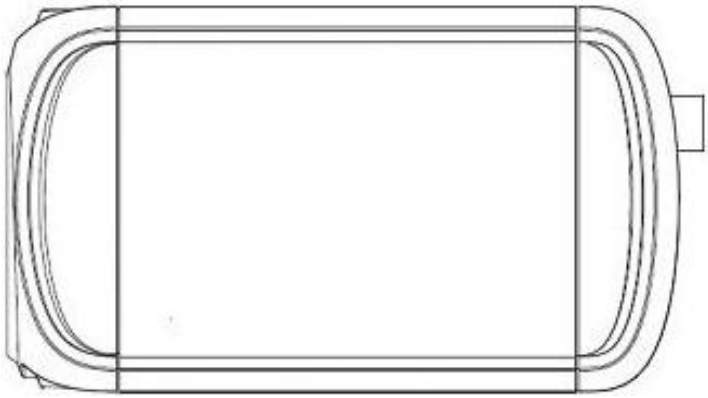


Figure 2-2 DS-2CZ215(8)(9)2P(N)-(WD) Side Panel

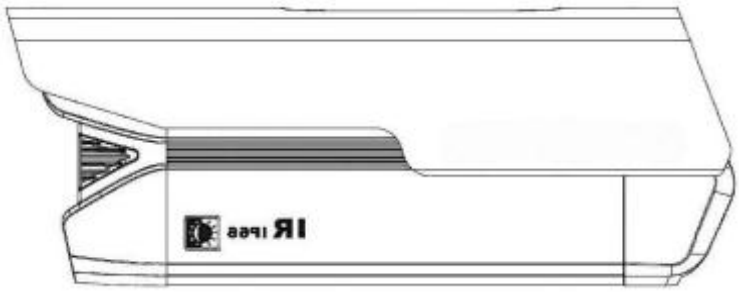


Figure 2-3 DS-2CZ2152P-IRA Side Panel

2.3 Connections

2.3.1 Rear Panel Definition

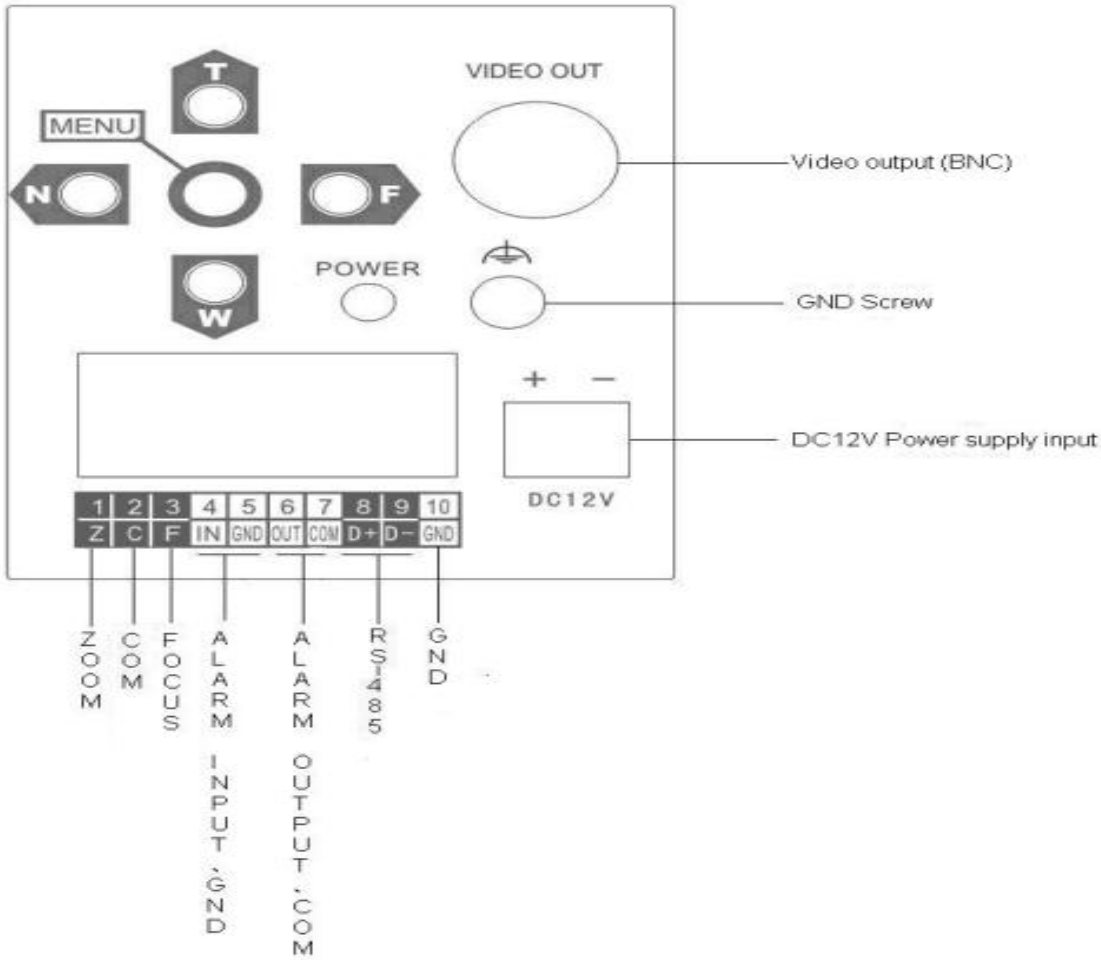


Figure 2-4 DS-2CZ2132P(N), DS-2CZ2152P(N), DS-2CZ2182P(N), DS-2CZ2912P(N) Rear Panel Definition

Figure 2-5 DS-2CZ2152P-IRA wiring definition

Table 2-1 DS-2CZ2152P-IRA Interfaces Description

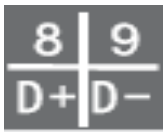
No.	Name	Description
1	GND	GND Interface
2	Power	12V DC Power Supply
3	ZCF	Zoom and Focus control interfaces
4	Video Output	Video Output Interfaces
5	RS-485	D+,D- Control Signal Input

2.3.2 I/O Interfaces Description

The interfaces description of DS-2CZ21X2P(N) are as follows:

Table 2-2 DS-2CZ21X2P(N) interfaces description

Pin No.	Name	Description
	ZOOM	(Wire Control Interface) Lens Zoom Adjustment
	COM	(Wire Control Interface) Common Interface for the Pins No. 1 and No. 3
	FOCUS	(Wire Control Interface) Focus Adjustment
	IN/GND	Trigger Interface of the Day/Night switching/GND Interface
	OUT/COM	Alarm Output/Common Interface

	RS-485 D+/RS-485 D-	External Control Signal Input
	GND	GND Interface

Note: The working voltage of Z interface is +3V ~ +12V or -3V ~ -12V. The working voltage of F interface is +3V to +12V or - 3V to -12V.

The maximum drive voltage and current of the alarm output interface (with the Open Collector inside) is 24VDC and 45mA.

Zoom/Focus Remote Control

Purpose:

You can route the cable from the RS-485 signal output connector of your control device to the RS-485 signal input connector of the camera. Then use the control device to adjust the lens remotely.

The RS-485 connector  supports PELCO-D protocol.

The default setting requirements are:

- The baud rate is 2400bit/s.
- The protocol is PELCO-D.

- The data bit is 8bit.
- The stop bit is 1bit.
- The parity bit is none.

Day/Night in, GND, Alarm output, Alarm output Com

- You can use the 4-IN interface to trigger the switching between the Day mode and Night mode.
- Connect an alarm output device to the 6-OUT interface

. The motion detection can trigger alarm output.

2.3.3 Power supply

Connect the supplied power adapter to the power supply connector

. Make sure that the power indicator is in solid red.

Note: Please make sure that the power adapter can match with the camera. The standard power supply of the camera is usually 12V DC (Please refer to technical specifications for more details).

2.3.4 Installation

Before mounting, please make sure that the device in the package is in good condition and all the assembly parts are complete.

Note: Please ensure that the wall is strong enough to withstand three times the weight of the camera and then install the camera

securely. If the wall is not strong enough, the camera may fall and cause serious damage.

There are two mounting methods for box camera: wall mounting and ceiling mounting. You can choose one method on your demand. We take ceiling mounting for example to introduce the mounting steps. Wall mounting steps are the same.

Steps:

1. Drill mounting holes on the ceiling.
2. Align the holes of the mount with the mounting holes on the ceiling.
3. Secure the mount to the ceiling with self-tapping screws.

Note: Please use expansion screws if the camera is mounted to cement wall.

4. Align the mount adapter of the camera with the mount.
5. Rotate the camera clockwise to secure the camera with the mount.
6. Route the cables and view the camera image using the monitor.
7. Adjust the azimuth angle of the image.
8. Tighten the knob on the mount to fix the angle of the camera.

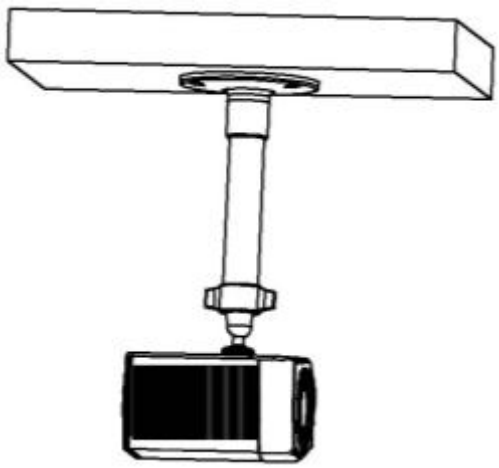


Figure 2-6 Installing the Camera

3 Menu Functions

The menu functions of the DS-2CZ21X2P/N are introduced in this chapter. The first part is the instruction of the menu buttons, the second part is the instruction of the menu configuration of all the items.

Note: To configure the menu function of the DS-2CZ2152P-IRA model, you have to use the control device to send RS-485 signals to call the 95 preset.

3.1 Menu Button Operation

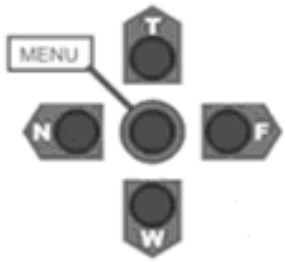


Figure 3-1 the Buttons of Camera

There are two working modes for the setting buttons: common and Menu modes.

Common mode:

T/W buttons: You can press them to zoom out and in.

N/F buttons: You can press them to focus near and far.

Menu button: Pressing the MENU button for 2 seconds, you can enter the menu mode. The main menu displays on the screen.

Menu mode:

T/W button: You can use these buttons to move the cursor up/down.

N/F button: You can use these buttons to switch options.

Menu button: You can use this button to enter or exit the submenu.

3.2 OSD Menu Configuration

Press the menu button for 2 seconds to enter the main menu. Refer to the Figure 3-2.

- The menu items are on the left. The options are on the right.
- "…" means there is a submenu you can enter.
- "---" means this menu is not available.

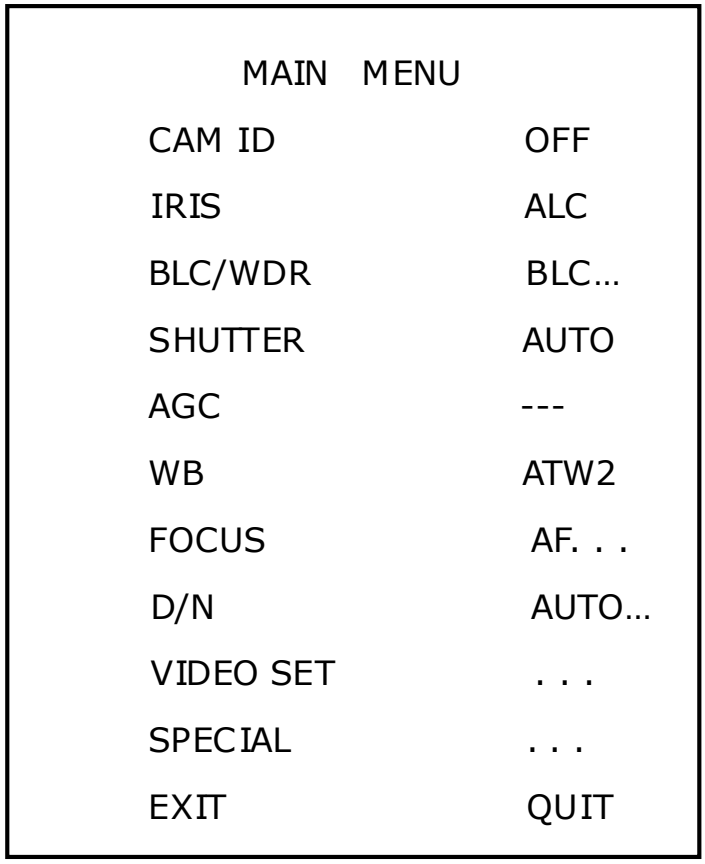


Figure 3-2 Main Menu

3.2.1 Main Menu Overview

Table 3-1 Main Menu

The Main Menu	
Menus	**Options**
CAM ID	OFF/001~254
IRIS	ALC/ELC/MANUAL…

BLC/WDR	BLC…
SHUTTER	The SHUTTER value can be set to AUTO, AUTOx2, AUTOx4, AUTOx6, AUTOx8, AUTOx12, AUTOx16, AUTOx24, AUTOx32, AUTOx48, AUTOx64, AUTOx96, AUTOx128, AUTOx256, 1/50, 1/120, 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K or the value is not adjustable.
AGC	The AGC value can be set to LOW, HIGH, OFF or the value is not adjustable. The MOVE value can be set to NORM, FAST, FASTER, SLOWER, SLOW when the SHUTTER value is the slow shutter value.
WB	ATW1/ATW2/ MANUAL…/ATC
FOCUS	AF. . ./ MANUAL/ONE AF
8.D/N	AUTO. . ./ NIGHT/ DAY/TRIG
VIDEO SET	Press Menu button to enter VIDEO SET submenu. DNR/MIRROR/EXPOSURE/DEFINITION/DONTRAST/CHROMA/POSNEG/EIS/SUPPRESS/RET
SPECIAL	Press Menu button to enter SPECIAL submenu. The submenu items are shown in Table 3.2.2.
EXIT	QUIT/SAVE/DEFAULT

Table 3-2 SPECIAL Submenu

The SPECIAL Submenu

Menus	Options
GAMMA	0.45/1
MASK	ON. . ./OFF
MD	Motion Detection: ON. . ./OFF
ZOOMRATE	1/2/3/4/5
EZOOM	OFF/x2/x4/x6/x8/x10/x12/x14/x16
ZOOMDISP	ON/OFF
ZCFMOD	MODE1/MODE2
RS-485	PROTOCOL/BAUDRATE/ADDRESS
PRESET	PRESETND/ZOOM SET
RET	Return

3.2.2 CAM ID Setting (Camera ID)

Steps:

1. Move the cursor to **CAM ID**, press the left/right buttons to select one number or disable this function.
2. Move the cursor to **EXIT**, press the left/right buttons to select **SAVE**, press the menu button to save the setting and exit.
3. If you set a **CAM ID**, you can find the ID number is displayed on the top right corner of the screen.

3.2.3 IRIS Setting

The iris mode can be set to **Manual. . .** , **ALC** (auto) and **ELC** (Electronic).

- **Manual. . .** mode:

Purpose:

You can adjust the Iris manually to adjust the brightness level of the camera.

Steps:

1. Select **Manual. . .** mode, press the menu button to enter the submenu as shown in Figure 3-3.
2. In the submenu ,you can increase the **LEVEL** value to brighten the scene. Decrease the **LEVEL** to darken the scene. The range is from 0 to 63.
3. Move the cursor to **RET** to return to the previous menu.
4. If you want to save the settings, move the cursor to **EXIT**, press the left/right buttons to choose **SAVE**, press the menu button to save the settings.

- **ALC** mode:

If you choose ALC mode, the camera adjust the Iris automatically in response to changing light conditions.

- **ELC** mode:

The Iris is turned to wide open in the ELC mode.

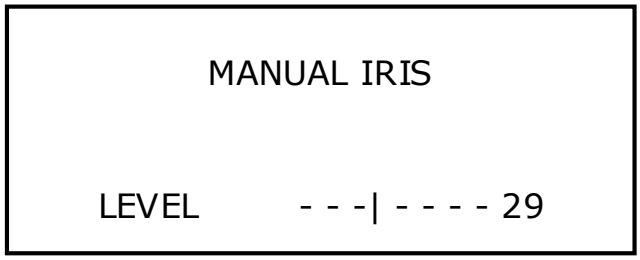


Figure 3-3 Manual Iris

3.2.4 BLC/WDR Setting (Back Light Compensation/Wide Dynamic Range)

- **BLC** (Back Light Compensation)

Purpose:

When there is a bright backlight and the subjects before the backlight is too dark, you can enable the BLC (Back Light Compensation) function.

In the **BLC. . .** submenu, select one area where the dark object is in this area. The camera will properly expose the object in the area. But the backlight out of this area will be over exposed.

Steps:

1. Press the up/down buttons to position the cursor on **BLC/WDR**, press the menu button to enter the **BLC. . .** submenu.
2. Move the cursor to **TYPE**, the BLC type can be set to **OFF**, **RIGHT**, **LEFT**, **DOWN**, **UP**, **CENTER**.
3. Press the up/down buttons to position the cursor on **RET** to return to the previous menu.

4. If you want to save the settings, move the cursor to **EXIT**, press the left/right buttons to choose **SAVE**, press the menu button to save the settings.

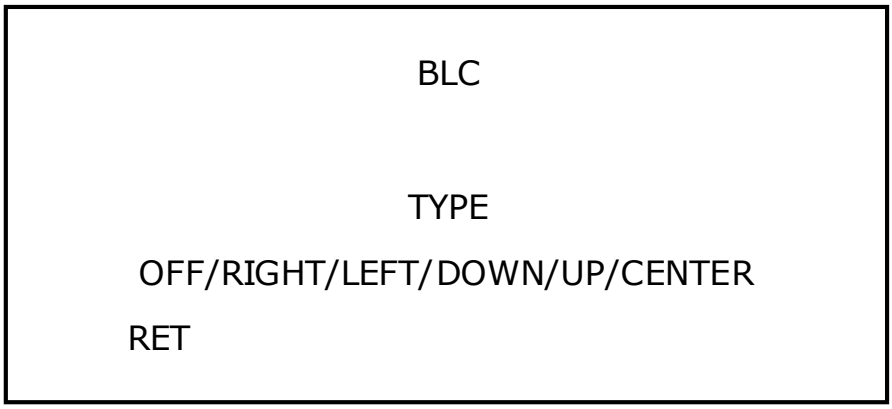


Figure 3-4 BLC

- **WDR** (Wide Dynamic Range)

Note: Only the models with "-WD" support Wide Dynamic Range function.

The Wide Dynamic Range function combines a long time exposed image and a short time exposed image to get an image for both bright and dark areas to be visible. The image also provides details in both areas.

Steps:

1. Press the up/down buttons to position the cursor on **BLC/WDR**, press the menu button to enter the **WDR. . .** submenu.

2. Move the cursor to **LEVEL**, press the left/right buttons to adjust the level value. The value is larger, the exposing effect is more obvious.
3. Move the cursor to **CONTRAST**, press the left/right buttons to adjust the level value.
4. Press the up/down buttons to position the cursor on **RET** to return to the previous menu.
5. If you want to save the settings, move the cursor to **EXIT**, press the left/right buttons to choose **SAVE**, press the menu button to save the settings.

Figure 3-5 Wide Dynamic Range

3.2.5 SHUTTER Setting

The shutter value is the speed of the electronic shutter. The duration for exposure is determined by shutter value. The **SHUTTER** value can affect the brightness of the image.

- When the **IRIS** value is **ALC** or **MANUAL...**, the **SHUTTER** value can be set to AUTO, AUTOx2, AUTOx4, AUTOx6, AUTOx8, AUTOx12, AUTOx16, AUTOx24, AUTOx32, AUTOx48, AUTOx64,

AUTOx96, AUTOx128, AUTOx256, 1/50, 1/120, 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K.

- AUTO, AUTOx2, AUTOx4, AUTOx6, AUTOx8, AUTOx12, AUTOx16, AUTOx24, AUTOx32, AUTOx48, AUTOx64, AUTOx96, AUTOx128, AUTOx256 values are called slow shutter values.
- When the IRIS value is **ELC**, the **SHUTTER** value is not adjustable.

Steps:

1. Press the up/down buttons to move the cursor to **SHUTTER**, press the left/right buttons to select one shutter value you need.
2. Move the cursor to **EXIT**, press left/right buttons to choose **SAVE**, press the menu button to save the settings.

3.2.6 AGC Setting (Auto Gain Control)

In low-light conditions, the camera balances the **AGC** value and the **SHUTTER** value to enhance the brightness of the image.

- When the IRIS value is **ALC** or **MANUAL...** and the **SHUTTER** value is slow shutter value, the **AGC** menu will switch to **MOVE** menu. The **MOVE** menu can be set to **NORM**, **FAST**, **FASTER**, **SLOWER**, **SLOW**.
- When the **SHUTTER** value is slow shutter value, you can set the **MOVE** values according to the speed of the moving objects in the scene. This can reduce the streaking of the fast moving objects.
  - If the speed of the moving objects is low, you can choose **SLOWER** and **SLOW.**

- ☐ If the speed of the moving objects is normal, you can choose **NORM.**
- ☐ If the speed of the moving objects is high, you can choose **FAST** and **FASTER**.

- When the **IRIS** value is **ALC** and the **SHUTTER** value is 1/50, 1/120, 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K, the **AGC** value is not adjustable.
- When the **IRIS** value is **MANUAL...** and the **SHUTTER** value is 1/50, 1/120, 1/250, 1/500, 1/1K, 1/2K, 1/4K, 1/10K, the **AGC** value can be set to **LOW**, **HIGH**, **OFF**.
- When the **IRIS** value is **ELC**, the **AGC** value can be set to **LOW**, **HIGH**, **OFF**.

3.2.7 WB Setting (White Balance)

This feature processes the viewed image to retain color balance over a color temperature range and remove the unrealistic color casts. The WB mode can be set to **ATW1**, **ATW2**, **ATC**, and **Manual. . .** .

- **ATW1**: The Auto Tracking White Balance. In the ATW mode, white balance is continuously being adjusted in real-time according to the color temperature of the scene illumination. The color temperature range of the ATW1 mode is from 1800K to 10500K.
- **ATW2**: The Auto Tracking White Balance. In the ATW mode, white balance is continuously being adjusted in real-time according to the color temperature of the scene illumination.

The color temperature range of the ATW2 mode is from 1800K to 15000K.

- **ATC**: Select ATC mode, the camera retains color balance automatically according to the current color temperature. If the lighting environment is changed, you have to readjust the settings accordingly.
- **Manual. . .** : You can adjust the color temperature manually to meet your own demand.

Steps:

1. Select **Manual. . .** and press the menu button to enter the submenu.
2. Move the cursor to **SET**, press the left/right buttons to select a SET value. **SET** can be set to **3200K**, **6300K** and **USER**.
   - **3200K** is an estimated value for indoor application. And the **RED** and **BLUE** values are not adjustable.
   - **6300K** is an estimated value for outdoor application. And the **RED** and **BLUE** values are not adjustable.
   - When you select **USER**, you can adjust the **RED** and **BLUE** values to meet your demand.

MWB	
SET	USER
RED	032
BLUE	016

Figure 3-6 Manual White Balance

3.2.8 FOCUS Setting

The FOCUS mode can be set to **AF. . .** , **MANUAL** and **ONE AF**.

- **AF. . .**: This is the auto focus setting. If you choose the **AF...** mode, the lens keeps in focus during the zoom-in and zoom-out functions.

Steps:

1. Move the cursor to **FOCUS**, press the left/right buttons to choose **AF...** .
2. Select the **MODE**, **SENSE** and **NEAR LIM** values of the auto focus. The available values are shown in the Figure 3-7.
   - **MODE**: The auto focus mode can be set to **NORM** and **INTERVAL**. The lens focuses continuously when you select the **NORM** mode. The lens focuses at intervals when you select the **NORM** mode.
   - **SENSE**: The sensitivity of autofocus function can be set to **MID**, **LOW**, **HIGH**.
   - **NEAR LIM:** You can set the nearest focus distance to **1M**, **1.5M**, **3M**, **6M**, **10CM**, **30CM** and **INF**(infinite).

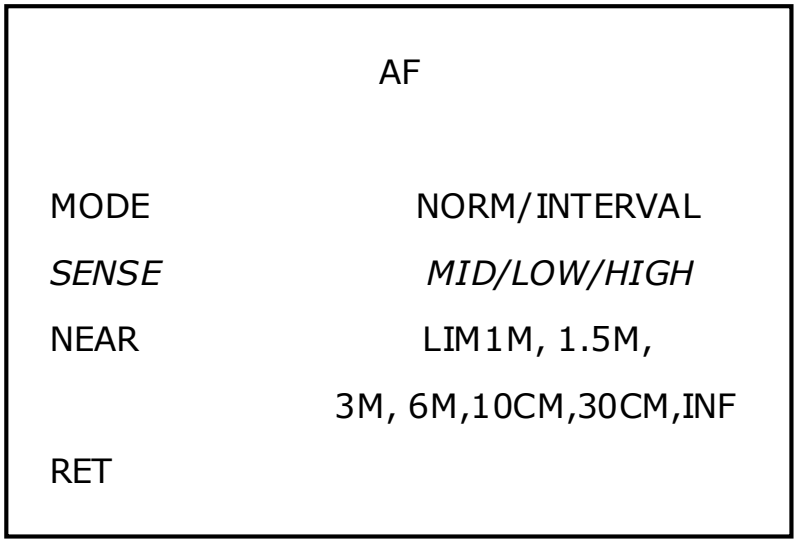


Figure 3-7 Focus Mode Settings

- **ONE AF:** If you choose **ONE AF** mode, the lens will be focused automatically once. You have to manually adjust the focus, when the scene changes.
- **MANUAL:** If you choose **MANUAL** mode, to focus, you can press the **FOCUS NEAR** and **FOCUS FAR** buttons on the rear plate of the camera.

3.2.9 D/N Setting (Day/Night)

The **DAY/NIGHT** mode can be set to **TRIG**, **AUTO**…, **DAY** and **NIGHT**.

- **TRIG** mode, the day and night mode is switched by triggering the 4-IN interface on the rear plate of the camera.
- **DAY** mode is used for normal lighting conditions. The camera delivers color image.

- **NIGHT** mode can increase the sensitivity in low light conditions. The camera delivers black and white image.
- **AUTO** mode, the day mode and the night mode can switch automatically.

Steps:

3. After moving the cursor to **D/N**, choose the **AUTO...** mode.
4. Press the menu button to enter the submenu.
   - ☐ **LEVEL**: The day/night mode switches when the light condition reaches to the value you select. The value ranges from 0 to 7.
   - ☐ **DAY→NIGHT**: The value can be set to 2s, 3s, 5s, 10s, 15s, 20s, 25s and 30s. This value is the delay time before the day mode switches to the night mode.
   - ☐ **NIGHT→DAY**: The value can be set to 2s, 3s, 5s, 10s, 15s, 20s, 25s and 30s. This value is the delay time before the night mode switches to the day mode.

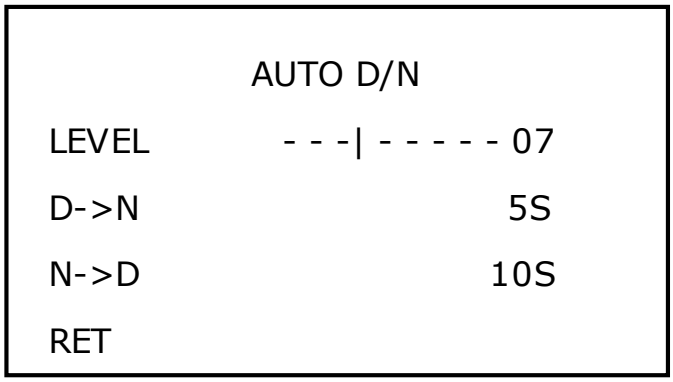


Figure 3-8 Auto D/N

3.2.10 VIDEO Parameters Setting

Steps:

1. Move the cursor to the **VIDEO SET...** .
2. Press menu button to enter the submenu as shown in Figure 3-9
3. In the submenu, the adjustable features are **DNR**, **MIRROR**, **EXPOSURE**, **DEFINITION**, **CONTRAST**, **CHROMA**, **POS/NEG**, **EIS** and **SUPPRESS**.

VIDEO SET	
DNR	1
MIRROR	OFF
EXPOSURE	- - -| - - - - - 07
DEFINITION	- - -| - - - - - 07
CONTRAST	- -| - - 02
CHROMA	- -| - - 03
POS/NEG	+
EIS	OFF
SUPPRESS	2
RET	

Figure 3-9 VIDEO SET Parameters

- **DNR**

DNR (Digital Noise Reduction) function can reduce the noise in the image. The reduce value can be set to 1, 2, 3, 4, 5 and OFF.

- **MIRROR**

If you turn the **MIRROR** function on, the image will be flipped. It is like the image in the mirror. The flip direction can be set to **OFF**, **HORIZONTAL**, **CENTRAL** and **VERTICAL.**

- **EXPOSURE**

This function can enhance the brightness of the image. The value ranges from 0 to 15.

- **DEFINITION**

DEFINITION describes the clarity of detail in the image. The value ranges from 0 to 15.

- **CONTRAST**

This feature enhances the difference in color and light between parts of an image. The value ranges from 0 to 7.

- CHROMA

Adjust this feature to change the depth of the color. The value ranges from 0 to 7.

- **POS/NEG**

The default setting of the **POS/NEG** is +. It means the image is positive. If you select -, you can see the image turn to positive.

- **EIS**

Turning the **EIS** (Electronic Image Stabilization) function on may reduce the image vibration caused by external environment.

- **SUPPRESS**

You can take advantage of this function to reduce the color under the night mode. The value ranges from 0 to 3.

3.2.11 SPECIAL Functions Setting

Steps:

1. Move the cursor to the **SPECIAL**.
2. Press menu button to enter the submenu as shown in Figure 3-10.
3. In the submenu, the adjustable features are **MASK**, **MD**, **ZOOMRATE**, **EZOOM**, **ZOOMDISP**, **ZCFMOD**, **RS-485** and **PRESET**.

SPECIAL	
VIDEO	…
ZOOMRATE	1/ 2/ 3/ 4/5
EZOOM	OFF,x2,x4,x6,x8,x10, x12,x14,x16
ZOOMDISP	ON/OFF
ZCFMOD	MODE1/MODE2
RS485	…
PRESET	…
BLEMISH	DETECT
RET	

Figure 3-10 SPECIAL Settings

- **MASK** (Privacy Mask)

Steps:

1. Move the cursor to **MASK**, press the left/right buttons to select **ON...** .
2. Press the menu button to enter the submenu.
3. Move the cursor to **MASK NO.** to choose a mask number. There are up to 8 privacy masks you can configure.
4. Move the cursor to **ON/OFF** and select **ON** to enable the privacy mask function.
5. Move the cursor to **MASK SET**.
   1). Press the menu button to select **LOC**.
   2). Press the up/down/left/right buttons to set the position of the privacy mask on the screen.
   3). Press the menu button to select **SIZE**.
   4). Press the up/down/left/right buttons to set the size of the privacy mask.
   5). Press the menu button to select **OK** to finish setting the position and size of the privacy mask.
6. Move the cursor to **COLOR**, press the left/right buttons to select the color you want. There are 14 colors available.
7. If you want mosaic privacy masks, move the cursor to **MOSAIC** and enable this function.
8. Move the cursor to **RET**, press the menu button to return to the previous menu.

9. In the main menu, move the cursor to EXIT, press the left/right buttons to select **SAVE**, **DEL** or **QUIT**
10. Press the menu button to exit the menu.

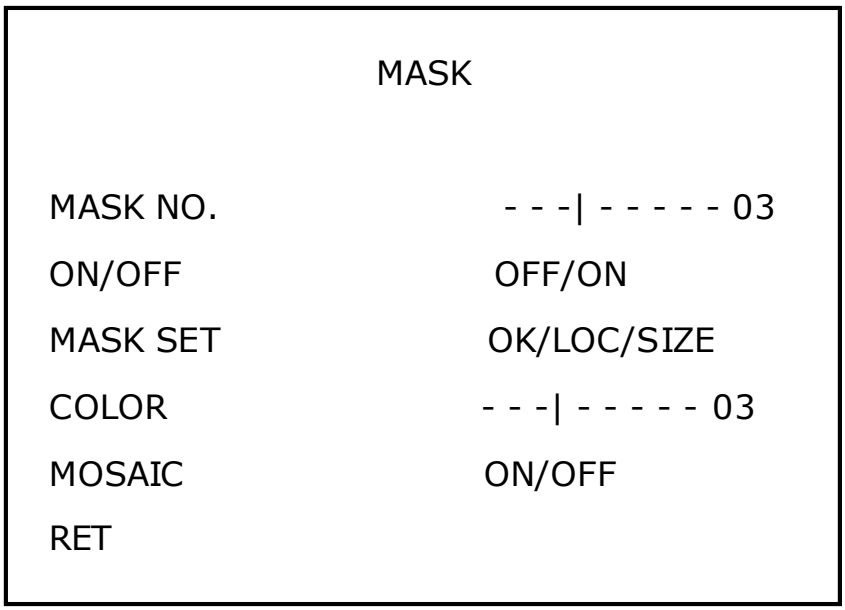


Figure 3-11 Motion Detection

- **MD** (Motion Detection)

Steps:

1. Move the cursor to **MD**, press the left/right buttons to select **ON...** .
2. Press the menu button to enter the submenu.
3. Move the cursor to **TYPE**, select the type you want. There are 2 types. Type 1 is a frame with the adjustable position and the size. Type 2 is the full screen panes.

Type1 settings:

1). Move the cursor to **AREA**.

2). Press the menu button to select **LOC**.

3). Press the up/down/left/right buttons to set the position of the motion detection area on the screen.

4). Press the menu button to select **SIZE**.

5). Press the up/down/left/right buttons to set the size of the area.

6). Press the menu button to select **OK** to finish setting the position and size of the area.

7). Move the cursor to **SENSE**. You can select **LOW**, **MID**, **HIGH** to set the sensitivity level of the motion detection.

Type2 settings:

1). Move the cursor to **SENSE**. You can select **LOW**, **MID**, **HIGH** to set the sensitivity level of the motion detection.

2). Move the cursor to **RET**, press the menu button to return to the previous menu.

3). In the main menu, move the cursor to EXIT, press the left/right buttons to select **SAVE**, **DEL** or **QUIT**

4). Press the menu button to exit the menu.

MOTION DET	
TYPE	1/2
AREA	OK/LOC/SIZE
SENSE	HIGH/MID/LOW
RET	

Figure 3-12 Motion Detection

- **ZOOMRATE**

You can adjust this feature to change the speed of zoom. The value ranges from 1 to 5. The value is larger, the speed is higher.

- **EZOOM**

The **EZOOM** can be set to OFF, x2, x4, x6, x8, x10, x12, x14 and x16. The maximum optical zoom is 23X. 2 times 23X is 46X. If you choose x2, the maximum digital zoom can reach to 46X. The camera zooms electronically after reaching to the value 23x.

- **ZOOMDISP**

There are two **ZOOMDISP** modes:

ON: The zoom value will be displayed on the top right of the screen when you press the T/W buttons.

OFF: The zoom value will not be displayed on the top right of the screen when you press the T/W buttons.

- **ZCFMOD**

The **ZCFMOD** can be set to **MODE1** and **MODE2**.

When you select the **MODE1**, the zoom in voltage is from +3V to +12V. The zoom out voltage is from -3V to -12V.

When you select the **MODE2**, the zoom in voltage is from -3V to -12V. The zoom out voltage is from +3V to +12V.

The voltage of the focus near and far is the same as the zoom in and out in these two modes.

- **RS-485**

Before you use the RS-485 interface to send control signal to the camera, you have to configure the RS-485 parameters first.

PROTOCOL: The control protocol is PELCO-D. It is not adjustable.

BAUDRATE: The baudrate can be set to 1200, 2400, 4800, 9600, 19200 and 38400.

ADDRESS: Choose a number as the address of the camera. It is for the control device to distinguish the different cameras when there are multiple cameras to control.

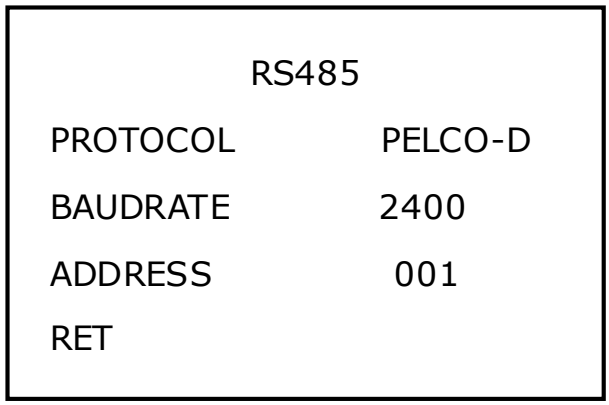


Figure 3-13 RS-485 Settings

- **PRESET**

There are up to 254 presets that can be configured.

Steps:

1. Move the cursor to **PRESET** and press the menu button to enter the submenu
2. Move the cursor to **PRESET NO** and select one preset number.
3. Move the cursor to **ZOOM SET**, press the menu button to turn the ◇ symbol to ◆.

4. Press the up/down buttons to zoom in and zoom out.
5. press the menu button to turn the ◆ symbol to ◇.
6. Move the cursor to **EXIT**, press the left/right buttons to select **SAVE**, **DEL** or **QUIT**.
7. Press the menu button to exit the menu.

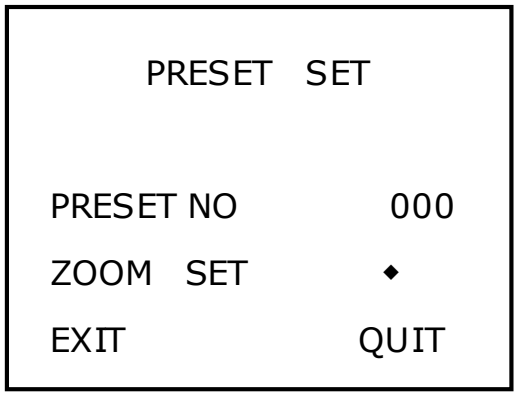


Figure 3-14 Preset Programming

3.2.12 EXIT

Purpose:

EXIT option is used for returning default, saving or canceling the settings.

Steps:

1. Move the cursor to **EXIT**, press the left/right buttons to choose an option.
   - **SAVE**: When you select **SAVE**, all the modifications will be saved before exit the menu.

- **DEFAULT**: When you select **DEFAULT**, all the settings will be initialized to factory settings before exit the menu.
- **QUIT**: When you select **QUIT**, all the modifications will be canceled before exit the menu.

2. Press the menu button to confirm your selection.

Appendix

Table 1 DS-2CZ2132P(N)

Specification

Model / Parameter	DS-2CZ2132P(N)
	22X CCD Day&Night Zoom Camera
Camera	
Image Sensor	1/4" SONY Interline Transfer Super HAD-II CCD
Signal System	PAL/NTSC
Effective Pixels	PAL: 752(H)x582(V) NTSC: 768(H)x494(V)
Min. Illumination	0.2Lux @ (F1.6,AGC ON), 0.0008Lux @ (F1.6,AGC ON, sensitivity × 256)
Shutter Time	PAL: 1/50 to 1/10,000s NTSC: 1/60 to 1/10,000s
Day & Night	Electronic
Horizontal Resolution	540TVL
Synchronization	Internal synchronization
Video Output	1Vp-p Composite Output (75Ω/BNC)
S/N Ratio	More than 50dB
Lens	

Focal Length	3.9-85.8mm,22X
Zoom Speed	Approx 3s (Optical Wide-Tele)
Angle of View	49.6°-2.40°(Wide-Tele)
Min. Working Distance	10-1500mm(Wide-Tele)
Aperture Range	F1.6-F3.7
Menu	
Camera ID	Off/On (0-254)
Iris Mode	ALC / Manual / ELC
Auto Gain	Low/High/Off
Auto White Balance	ATW1 / ATW2 / ATC / Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode1/Mode2
Video	Digital Zoom, 3D Digital Noise Reduction, POS/NEG ,Mirror, Resolution, Electronic image stabilization, Back Light Compensation

Zoom speed	1-5
Optical Zoom	OFF, x2, x4, x6, x8, x10, x12, x14, x16
Zoom Display	ON/OFF
ZCF	Model1/Model2
RS-485	Address/Protocol/Baud Rate
Preset	0 - 254
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 V DC ± 10%
Power Consumption	Max. 4W
Dimension	64 x 69 x 120 mm (2.53” x 2.42” x 4.46”)
Weight	450 g (0.99lbs)

Table 2 DS-2CZ2152P(N)

Specification

Parameter \ Model	DS-2CZ2152P(N)
	23X CCD Day&Night Zoom Camera
Camera	
Image Sensor	1/4" SONY Interline Transfer Super HAD-II CCD
Signal System	PAL/NTSC
Effective Pixels	PAL: 752(H)x582(V) NTSC: 768(H)x494(V)
Min. Illumination	Color: 0.2Lux @ (F1.6,AGC ON), 0.0008Lux @ (F1.6,AGC ON, sensitivity × 256) B / W: 0.02Lux @ (F1.6,AGC ON), 0.00008Lux @ (F1.6,AGC ON, sensitivity × 256)
Shutter Time	PAL: 1/50 to 1/10,000s NTSC: 1/60 to 1/10,000s
Day & Night	IR cut filter with auto switch
Horizontal Resolution	Color: 540 TVL B / W: 600TVL
Synchronization	Internal synchronization
Video Output	1Vp-p Composite Output (75Ω/BNC)

S/N Ratio	More than 50dB
Lens	
Focal Length	3.84-88.4mm,23X
Zoom Speed	Approx 3s (Optical Wide-Tele)
Angle of View	50.2-2.36°(Wide-Tele)
Min. Working Distance	10-1500mm(Wide-Tele)
Aperture Range	F1.6-F4.5
Menu	
Camera ID	Off/On (0-254)
Iris Mode	ALC / Manual / ELC
Auto Gain	Low/High/Off
Auto White Balance	ATW1 / ATW2 / ATC / Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode1/Mode2
Video	Digital Zoom, 3D Digital Noise Reduction, POS/NEG ,Mirror, Resolution, Electronic image

	stabilization, Back Light Compensation
Zoom speed	1-5
Optical Zoom	OFF, x2, x4, x6, x8, x10, x12, x14, x16
Zoom Display	ON/OFF
ZCF	Model1/Model2
RS-485	Address/Protocol/Baud Rate
Preset	0 - 254
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 V DC ± 10%
Power Consumption	Max. 4.5 W
Dimension	66 x 76 x 128 mm (2.6" x 3.0" x 5.0")
Weight	550 g (1.21lbs)

Table 3 DS-2CZ2152P-IRA

Specification

Parameter \ Model	DS-2CZ2152P-IRA
	23X CCD Day&Night Zoom Camera
Camera	
Image Sensor	1/4" SONY Interline Transfer Super HAD-II CCD
Signal System	PAL
Effective Pixels	752(H)x582(V)
Min. Illumination	Color: 0.2Lux @ (F1.6,AGC ON), 0.0008Lux @ (F1.6,AGC ON, sensitivity × 256) B / W: 0.02Lux @ (F1.6,AGC ON), 0.00008Lux @ (F1.6,AGC ON, sensitivity × 256)
Shutter Time	1/50 to 1/10,000s
Day & Night	IR cut filter with auto switch
Horizontal Resolution	Color: 540 TVL B / W: 600TVL
Synchronization	Internal synchronization
Video Output	1Vp-p Composite Output (75Ω/BNC)
S/N Ratio	More than 50dB
Lens	
Focal Length	3.84-88.4mm,23X

Zoom Speed	Approx 3s (Optical Wide-Tele)
Angle of View	50.2-2.36°(Wide-Tele)
Min. Working Distance	10-1500mm(Wide-Tele)
Aperture Range	F1.6-F4.5
Menu	
Camera ID	Off/On (0-254)
Iris Mode	ALC / Manual / ELC
Auto Gain	Low/High/Off
Auto White Balance	ATW1 / ATW2 / ATC / Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode1/Mode2
Video	Digital Zoom, 3D Digital Noise Reduction, POS/NEG ,Mirror, Resolution, Electronic image stabilization, Back Light Compensation
Zoom speed	1-5
Optical Zoom	OFF, x2, x4, x6, x8, x10, x12, x14, x16

Zoom Display	ON/OFF
ZCF	Model1/Model2
RS-485	Address/Protocol/Baud Rate
Preset	0 - 254
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 V DC ± 10%
Power Consumption	Max. 15 W
Weather Proof Rating	IP66
IR Range	Approx 100 meters
Dimension	117 x 97 x 255 mm (4.6″ x 3.8″ x 10.0″)
Weight	2.5 kg (5.51lbs)

Table 4 DS-2CZ2182P(N)

Specification

Model / Parameter	DS-2CZ2182P(N)
	30X CCD ICR Zoom Camera
Camera	
Image Sensor	1/4" SONY Interline Transfer Super HAD-II CCD
Signal System	PAL/NTSC
Effective Pixels	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	Color: 0.2Lux @ (F1.6, AGC ON), 0.0008 Lux @ (F1.6, AGC ON, sensitivity × 256) B/W: 0.02 Lux @ (F1.6, AGC ON), 0.00008 Lux @ (F1.6, AGC ON, sensitivity × 256)
Shutter Time	PAL: 1/50 to 1/10,000 s NTSC: 1/60 to 1/10,000 s
Day & Night	IR cut filter auto switch
Horizontal Resolution	540TVL (Color), 600TVL (B/W)
Synchronization	Internal synchronization
Video Output	1 Vp-p composite output (75Ω/BNC)
S/N Ratio	More than 50dB

Lens	
Focal Length	3.4-102 mm, 30X
Zoom Speed	Approx. 5 s (Optical, Wide-tele)
Angle of View	55.8 - 2.0 ° (Wide-tele)
Min. Working Distance	10 - 1500mm (Wide-tele)
Aperture Range	F1.4 – F3.7
Menu	
Camera ID	Off/On (0 - 254)
Iris Mode	Auto/Manual/Electronic
Auto Gain	Off/Low/High
Auto White Balance	ATW1/ATW2 /ATC/Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode 1/Mode 2
Video	3D-DNR,Mirror,Definition,Flickerless,Exposure-Compensation,BLC,Electronic image stabilization

Zoom speed	Level 1-5 adjustable
Digital Zoom	Off, ×2, ×4, ×6, ×8, ×10, ×12, ×14, ×16
Zoom Display	On/Off
ZCF Control Mode	Mode 1/Mode 2
RS-485	Protocol/Baud Rate/Address
Preset	0 - 254
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 VDC ± 10%
Power Consumption	Max. 4.5 W
Dimension	66 × 76 × 128 mm (2.6" x 3.0" x 5.0")
Weight	550 g (1.21lbs)

Table 5 DS-2CZ2192P(N)

Specification

Model / Parameter	DS-2CZ2192P(N)
	36X CCD ICR Zoom Camera
Camera	
Image Sensor	1/4" SONY Interline Transfer Super HAD-II CCD
Signal System	PAL/NTSC
Effective Pixels	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	Color: 0.2Lux @ (F1.6, AGC ON), 0.0008 Lux @ (F1.6, AGC ON, sensitivity × 256) B/W: 0.02 Lux @ (F1.6, AGC ON), 0.00008 Lux @ (F1.6, AGC ON, sensitivity × 256)
Shutter Time	PAL: 1/50 to 1/10,000 s NTSC: 1/60 to 1/10,000 s
Day & Night	IR cut filter auto switch
Horizontal Resolution	540TVL (Color), 600TVL (B/W)
Synchronization	Internal synchronization
Video Output	1 Vp-p composite output (75Ω/BNC)
S/N Ratio	More than 52dB
Lens	

Focal Length	3.3 - 119 mm, 36X
Zoom Speed	Approx. 6 s (Optical, Wide-tele)
Angle of View	57.1 - 1.7 ° (Wide-tele)
Min. Working Distance	10 - 1500mm (Wide-tele)
Aperture Range	F1.4 - F4.2
Menu	
Camera ID	Off/On (0 - 254)
Iris Mode	Auto/Manual/Electronic
Auto Gain	Off/Low/High
Auto White Balance	ATW1/ATW2 /ATC/Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode 1/Mode 2
Video	3D-DNR,Mirror,Definition,Flickerless,Exposure-Compensation,BLC,Electronic image stabilization
Zoom speed	Level 1-5 adjustable

Digital Zoom	Off, ×2, ×4, ×6, ×8, ×10, ×12, ×14, ×16
Zoom Display	On/Off
ZCF Control Mode	Mode 1/Mode 2
RS-485	Protocol/Baud Rate/Address
Preset	0 - 254
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 VDC ± 10%
Power Consumption	Max. 4.5 W
Dimension	66 × 76 × 128 mm (2.6” x 3.0” x 5.0”)
Weight	450 g (0.99lbs)

Table 6 DS-2CZ2182P-WD

Specification

Model / Parameter	DS-2CZ2182P-WD
	30X CCD ICR Zoom Camera
Camera	
Image Sensor	1/4" SONY Interline Transfer Super HAD-II CCD
Signal System	PAL
Effective Pixels	752 (H) × 582 (V)
Min. Illumination	Color: 0.2Lux @ (F1.6, AGC ON), 0.0008 Lux @ (F1.6, AGC ON, sensitivity × 256) B/W: 0.02 Lux @ (F1.6, AGC ON), 0.00008 Lux @ (F1.6, AGC ON, sensitivity × 256)
Shutter Time	1/50 to 1/10,000 s
Day & Night	IR cut filter auto switch
Horizontal Resolution	540TVL (Color), 600TVL (B/W)
Synchronization	Internal synchronization
Video Output	1 Vp-p composite output (75Ω/BNC)
S/N Ratio	More than 50dB
Lens	
Focal Length	3.5-105.5 mm, 30X
Zoom Speed	Approx. 5 s (Optical, Wide-tele)

Angle of View	56.4 - 2.0 ° (Wide-tele)
Min. Working Distance	10 - 1500mm (Wide-tele)
Aperture Range	F1.4 – F3.7
Menu	
Camera ID	Off/On (0 - 254)
Iris Mode	Auto/Manual/Electronic
Auto Gain	Off/Low/High
Auto White Balance	ATW1/ATW2 /ATC/Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode 1/Mode 2
Video	3D-DNR,Mirror,Definition,Flickerless,Exposure-Compensation,BLC,Electronic image stabilization, WDR
Zoom speed	Level 1-5 adjustable
Digital Zoom	Off, ×2, ×4, ×6, ×8, ×10, ×12, ×14, ×16
Zoom Display	On/Off

ZCF Control Mode	Mode 1/Mode 2
RS-485	Protocol/Baud Rate/Address
Preset	0 - 254
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 VDC ± 10%
Power Consumption	Max. 4.5 W
Dimension	66 × 76 × 128 mm (2.6" x 3.0" x 5.0")
Weight	550 g (1.21lbs)

Table 7 DS-2CZ2192P-WD

Specification

Model / Parameter	DS-2CZ2192P-WD
	36X CCD ICR Zoom Camera
Camera	
Image Sensor	1/4" SONY vertical double density interline CCD
Signal System	PAL
Effective Pixels	752 (H) × 582 (V)
Min. Illumination	Color: 0.2Lux @ (F1.6, AGC ON), 0.0008 Lux @ (F1.6, AGC ON, sensitivity × 256) B/W: 0.02 Lux @ (F1.6, AGC ON), 0.00008 Lux @ (F1.6, AGC ON, sensitivity × 256)
Shutter Time	1/50 to 1/10,000 s
Day & Night	IR cut filter auto switch
Horizontal Resolution	540TVL (Color), 600TVL (B/W)
Synchronization	Internal synchronization
Video Output	1 Vp-p composite output (75Ω/BNC)
S/N Ratio	More than 50dB
Lens	
Focal Length	3.3 - 119 mm, 36X

Zoom Speed	Approx. 6 s (Optical, Wide-tele)
Angle of View	57.1 - 1.7 ° (Wide-tele)
Min. Working Distance	10 - 1500mm (Wide-tele)
Aperture Range	F1.6 - F4.5
Menu	
Camera ID	Off/On (0 - 254)
Iris Mode	Auto/Manual/Electronic
Auto Gain	Off/Low/High
Auto White Balance	ATW1/ATW2 /ATC/Manual
Focus Mode	AF/ONE AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detection	Off/Mode 1/Mode 2
Video	3D-DNR,Mirror,Definition,Flickerless,Exposure -Compensation,BLC,Electronic image stabilization, WDR
Zoom speed	Level 1-5 adjustable
Digital Zoom	Off, ×2, ×4, ×6, ×8, ×10, ×12, ×14, ×16
Zoom Display	On/Off

ZCF Control Mode	Mode 1/Mode 2
RS-485	Protocol/Baud Rate/Address
Preset	0 - 254
Defect Pixel Correction	Yes
General	
Operating Conditions	-10°C - 60°C (14°F - 140°F) Humidity 90% or less(non-condensing)
Power Supply	12 VDC ± 10%
Power Consumption	Max. 5 W
Dimension	66 × 76 × 128 mm (2.6” x 3.0” x 5.0”)
Weight	450 g (0.99lbs)

Table 8 DS-2CZ2114P(N)

Specification

Model / Parameter	DS-2CZ2114P(N)
	18X CCD ICR Zoom Camera
Camera	
Image Sensor	1/3" SONY Interline Transfer EXview HAD-II CCD
Signal System	PAL/NTSC
Effective Pixels	PAL: 976 (H) × 582 (V) NTSC: 976 (H) × 494 (V)
Min. Illumination	Color: 0.1Lux @ (F1.6, AGC ON), 0.0008 Lux @ (F1.6, AGC ON, sensitivity × 256) B/W: 0.01 Lux @ (F1.6, AGC ON), 0.00008 Lux @ (F1.6, AGC ON, sensitivity × 256)
Shutter Time	PAL: 1/50 to 1/10,000 s NTSC: 1/60 to 1/10,000 s
Day & Night	IR cut filter auto switch
Horizontal Resolution	650TVL (Color), 700TVL (B/W)
Synchronization	Internal synchronization
Video Output	1 Vp-p composite output (75Ω/BNC)
S/N Ratio	More than 50dB

Lens	
Focal Length	4.55 – 81.9 mm, 18x
Zoom Speed	Approx. 4 s (Optical, Wide-tele)
Angle of View	55.62 – 3.35 ° (Wide-tele)
Min. Working Distance	10 - 1500mm (Wide-tele)
Aperture Range	F1.6 – F2.7
Menu	
Camera ID	Off/On (0 - 254)
Iris Mode	Auto/Manual/Electronic
Auto Gain	Off/Low/High
Auto White Balance	ATW1/ATW2 /ATC/Manual
Focus Mode	AF/One AF/Manual
Day/Night	Auto/Day/Night/TRIG
Slow Shutter	Max. X256
Privacy Mask	Off/On, up to 14 zones
Motion Detect	Off/Mode 1/Mode 2
Video	3D-DNR,Mirror,Definition,Flickerless,Exposure-Compensation,BLC,Electronic image stabilization
Zoom speed	Level 1-5 adjustable

Digital Zoom	Off, ×2, ×4, ×6, ×8, ×10, ×12, ×14, ×16
Zoom Display	On/Off
ZCF Control Mode	Mode 1/Mode 2
RS-485	Protocol/Baud Rate/Address
Preset	0 - 254
Defect Pixel Correction	Yes
General	
Operating Conditions	-10 ℃ - 60 ℃ (14 ℉ - 140 ℉) Humidity 90% or less (non-condensing)
Power Supply	12 V DC ± 10%
Power Consumption	Max. 5W
Dimension	66 × 76 × 128 mm (2.6” x 3.0” x 5.0”)
Weight	450 g (0.99lbs)