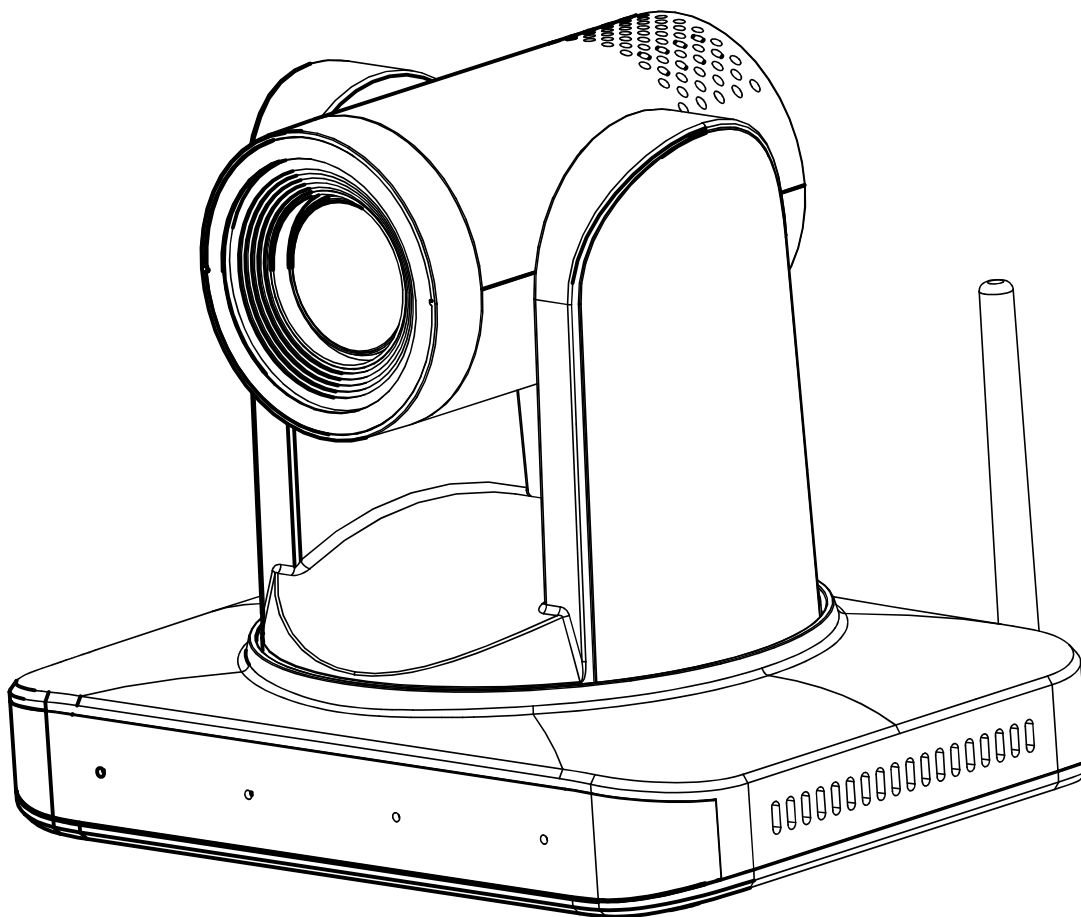


Wired&Wireless 4K PTZ Conference Camera

USB 3.0 | IP Streaming | TF Recording | AI Auto Tracking



UserManual
V1.1Version

Foreword:

Thank you for selecting this series of Video Conference Cameras.
Please read and understand this Operations Manual before using the product.

Warning:

To prevent this product or any other products connected from damage, this product can only be used within a predetermined range.

- Avoid raining or moisture environment;
- Do not remove product casing. Use certified personnel for installation and reparation;
- Do not use beyond the limitation of temperature, humidity or power voltage range;
- When cleaning the camera lens, use a soft, dry cloth; when seriously dirty, please use a mild detergent and wipe gently. Do not use strong cleaning agents or corrosive cleaner so as not to scratch the lens and affecting image quality.

 Notes

This manual covers the installation and use of a variety of models of our company's products. Please distinguish the product features, parameters and installation instructions according to your ordered product model number.

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Attentions

▼Electric Safety

Installation and operation must accord with electric safety standard.

▼Caution to transport

Avoid stress, vibration and soakage in transport, storage and installation.

▼Polarity of power supply

The power supply of the product is $\pm 12V$, and the polarity of the power plug is shown as following.



➤ Careful of installation

- Do not move the camera by seizing the camera head. Do not rotate camera head by hand; otherwise, mechanical trouble will occur.
 - This series item must put on the smooth desk or platform, and it cannot be installed slant ways;
 - If the camera is installed on TV or computer, the base can be fixed by four double-sided adhesive trays.
 - The product housing is made up of organic material, it is prohibited to contact any liquid, gas or solid material that may cause shell corrosion, and make sure no obstacle in rotation range during installation.
 - Do not power on before installation is completed.
 - **▼Don't disassemble discretionarily**
 - We are not responsible for any unauthorized modification or dismantling.
-
- **Attention!**
 - **Electromagnetic filed under certain rate may affect camera image!**

Accessory

When you unpack, check that all the supplied accessories are included:

Camera	1
5.8G receiver	1
Power Adapter	1
3m USB3.0 line(provided)	1
Cable	1
Control port junction box	1
Mounting bracket(wall bracket or hoisting bracket)(provided)	1
Remote Controller	1
User Manual	1

Product Highlights

•Precise positioning, quiet and smooth PTZ control

By adopting high accuracy Algorithm for PTZ Control, precise location($\pm 0.1^\circ$), it works extremely quiet and moves smoothly and very quickly to designated position

•Real 4K HD images

The 1/2.5-inch, 8.51 million effective pixel high-quality "Exmor R" CMOS sensor enables 3840×2160 ultra-high-resolution high-quality images. While ensuring ultra-high definition, the focus is on meeting the needs of picture smoothness.

•Low noise and high SNR

Adopt advanced 2D&3D noise reduce technology and low noise CMOS sensor to reduce the noise.

•Multiple optical zooms

•4KP30 HD USB 3.0 video output

Support 4KP30, 1080P30, 720P30 and other high-definition video standards.

•4KP30 HD wireless video output

Support 4KP30, 1080P30, 720P30 and other high-definition video standards.

•4KP30 HD network video output

Support 4KP30, 1080P30, 720P30 and other high-definition video formats

•TF card video support

Support TF card video function, support a variety of time recording, support audio recording.

•255 preset positions

255 positions can be preset through serial port, including level, pitch, zoom to preset, even if the camera is powered off, the preset data can be saved.

•Multi-functional remote controller

Equipped with simple remote control, it can not only use for level, pitch and zoom control, but also can set the parameters through remote control menu.

•OSD Chinese/English menu function

Various OSD menu, feasible for remote controller to control Chinese/English OSD menu.

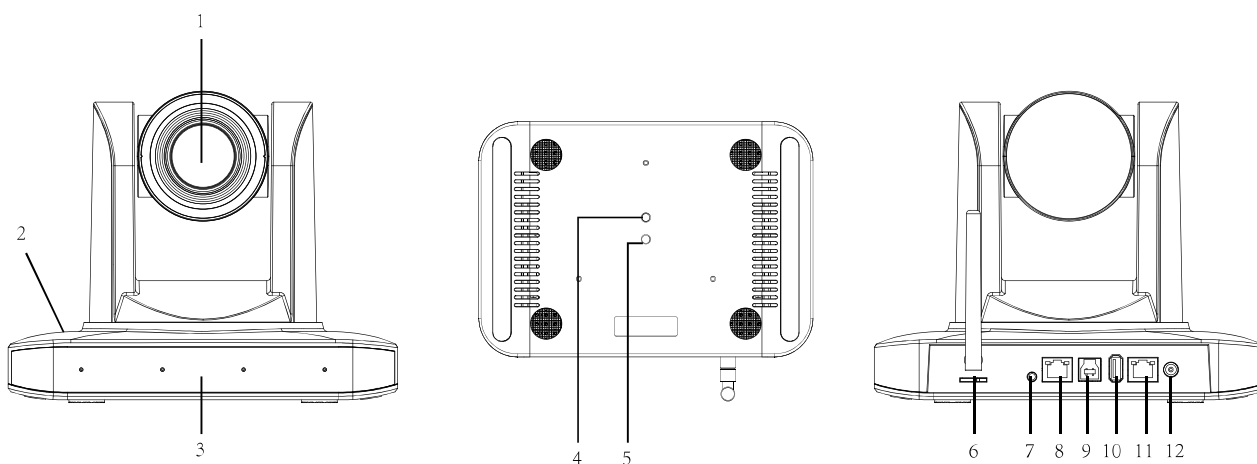
Camera Specifications

Camera	Signal system	USB 3.0/wireless MJPG, H264: 3840×2160 , 2560×1440 , 1920×1080 , 1280×720 , $640 \times 480/30$, YUY2: 2560×1440 , 1920×1080 , 1280×720 , $640 \times 480/30$
	Sensor	1/2.5-inch high-quality CMOS sensor, 8.51 million pixels
	Scan mode	progressive
	Horizontal and vertical field of view, ocal length, aperture	3x: Horizontal: 42° (wide-angle end) $\sim 105^\circ$ (tele), Vertical: 68° (wide-angle end) $\sim 4.9^\circ$ (tele), Focal length: 2.38mm $\sim$ 7mm Aperture: F2.0 $\sim$ F3.6 10x: Horizontal: 55° (wide-angle end) $\sim 5.5^\circ$ (tele), Vertical: 31.5° (wide-angle end) $\sim 3.2^\circ$ (tele), Focal length: 5.7mm $\sim$ 57mm Aperture: F1.8 $\sim$ F2.6
	Digital zoom	12x
	Minimum illumination	Support ultra-low illumination: 0.5Lux@F2.0 (color)
	Shutter	1/30s $\sim$ 1/10000s
	White balance	Automatic, Indoor, Outdoor, Manual
	Backlight compensation	Support
	Digital noise reduction	2D&3D Digital noise reduction
	Signal-to-noise ratio	$\geq 52\text{dB}$

Camera	Horizontal rotation range	±170°
	Vertical rotation range	-30° ~ +90°
	Horizontal rotation speed range	1 °/s ~ 100 °/s
	Vertical rotation speed range	1 °/s ~ 60 °/s
	Horizontal and vertical flip	Support
	Number of preset positions	255
	Accuracy of preset	±0.1°
Input/Output Interface	HD video interface:	
	USB3.0/5.8G Wireless	Supports USB 3.0 video output, up to 4KP30UVC Version 1.0
	TF Card	Note: Only supports models with TF interface. Supports TF card recording function, supports recording in multiple time periods, and supports audio recording
	IP	Code: HO.265/H.264/MJPEG, network protocol: IPv4, TCP, UDP, HTTP,NTP,DNS, DHCP,ARP, RTSP, RTP,RTCP, RTMP, SRT,NDI (Available) ,NVIF, VISCA OVER IP
	Communication interface	1 channel, RS-232 IN, maximum distance: 30 meters, VISCA/Pelco-D/Pelco-P protocol 1 channel, RS-422, maximum distance: 1200 meters, VISCA/Pelco-D/Pelco-P protocol
	Power interface	HEC3800 type (DC IN 12V) POE (Optional)
General Specifications	Input voltage	AC110V-AC220V ~ DC12V/1.5A
	Input current	DC12V(DC11.5-DC12.5V)
	Operating temperature	0°C ~ +45°C
	Storage temperature	-10°C~+60°C
	Power consumption	12W(max)
	Body size	215×150×160mm
	Packaging size	245mm×270mm×245mm
	Weight (net weight)	1225g
Parameters of Wireless Receiver	Frequency Range	5745MHz
	Receiving Power	≤19dBm
	Wireless Rate	150Mbps
	Working Mode	Station
	Transmission Distance	20 meters in open space
	Video Output Interface	USB 3.0
	Working Voltage	5V±0.2V
	Dimensions and Weight	193*26*12 28g(with antenna), 90*26*12 20g(without antenna)

Notice: Specifications and information of the camera are for reference only, and the contents are subject to change without prior notice.

Camera Interface Function



Interface

- 1. Camera lens
- 2. Camera Base
- 3. Remote Controller Receiver light
- 4. Installation screw hole
- 5. Installation Orientation Hole

- 6. TF Card interface
- 7. LINE IN interface
- 8. RJ45 interface (POE provide)
- 9. USB3.0 interface
- 10. USB2.0 interface

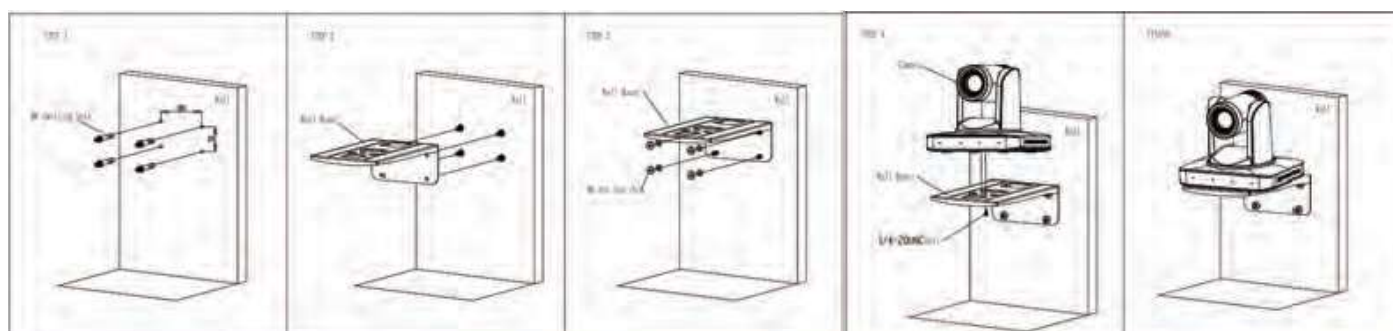
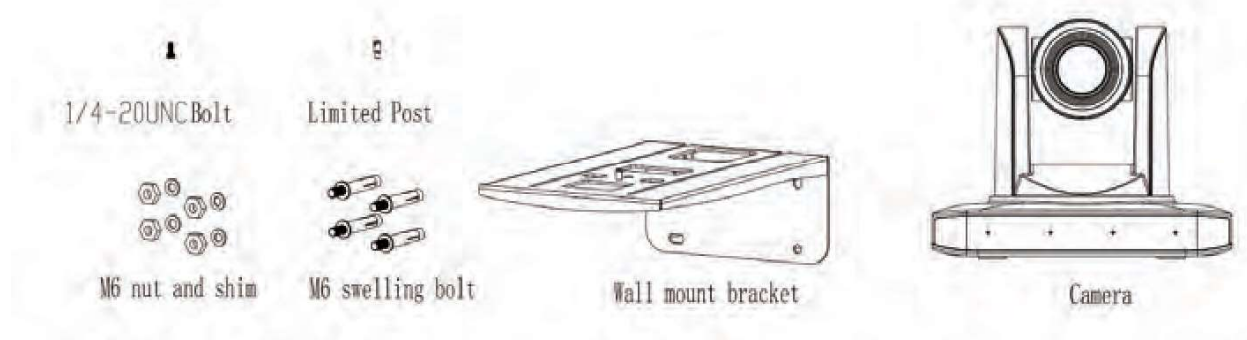
- 11. RS232/RS485 interface
- 12. DC12V interface

Note: You can only choose one between the network function and the USB/wireless function. USB/wireless function is prioritized. If you use the USB or wireless function and then use the network function, you need to power off and restart the camera. TF Card can only be used in network mode. TF Card supports 128GB.

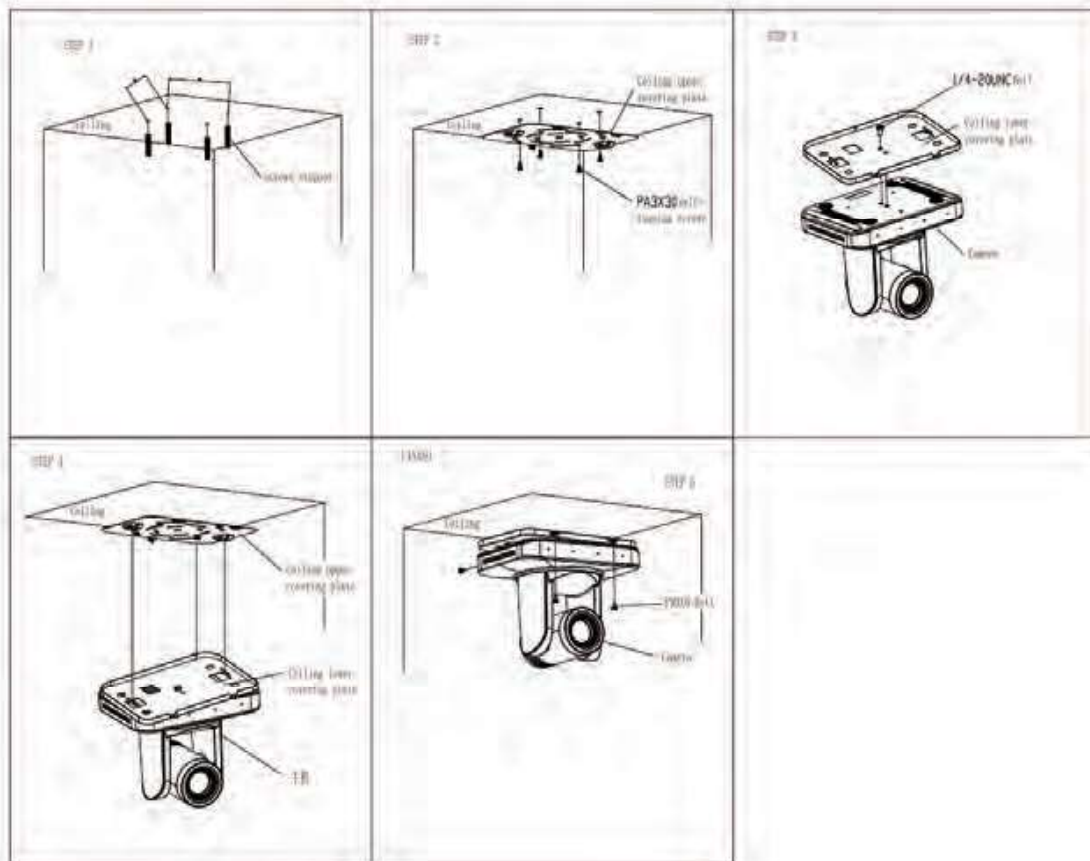
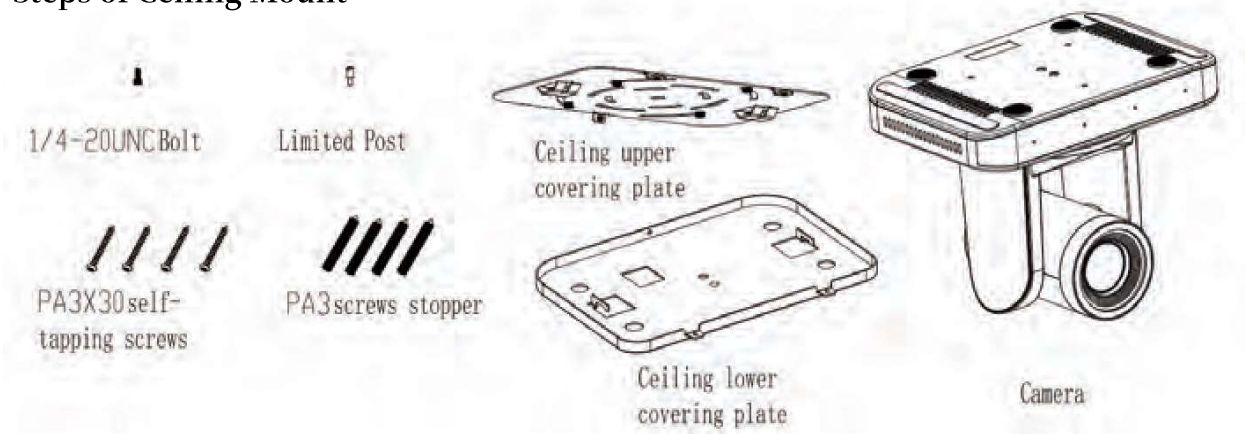
⚠ Bracket

· Bracket can only be wall mounted or upside down mounted on template and concrete wall, but can not be installed on plasterboard.

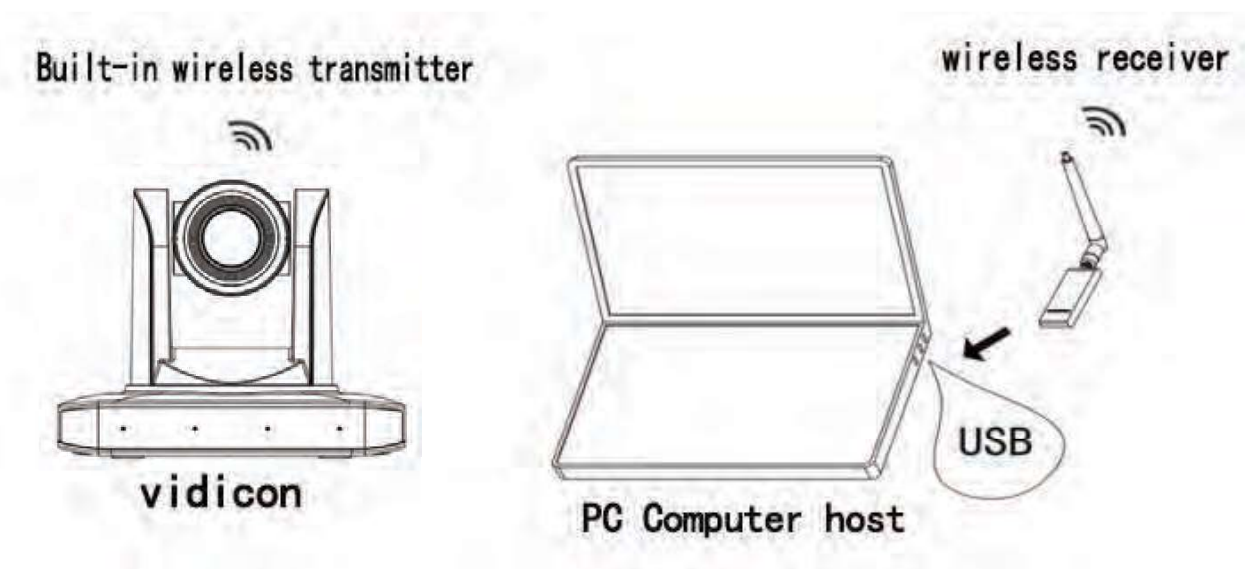
Steps of Wall Mount



Steps of Ceiling Mount



System wiring diagram



Notes

Device indicator light description:

Camera: The red light flashes when powered on for self-test; The orange light is always on to indicate successful connection with the wireless receiver; The orange light flashes to indicate unsuccessful connection with the wireless receiver or unstable signal.

Wireless receiver: The red light flashes when powered on; The orange light is always on to indicate successful connection with the camera; The orange light flashes to indicate unsuccessful connection with the camera or unstable signal.

Wireless pairing: First press the pairing button on the receiver and the indicator light flashes quickly, then press F2 on the remote control facing the camera, and the receiver indicator light is always on to indicate successful pairing.

IR Remote Controller Explanation

1.Power key

After press, the camera will step into standby mode. Press again, the camera will self-test again and back to HOME position.

(Note: If power-on mode is turned on and Preset 0 is set, it will automatically point to the specified preset position.)

2.Camera select key

Choose the camera address ready for control.

3、Number keys

Set or call preset positions 0-9

4、* key, # key

5、Focus key: focus control

Auto focus: enter into auto focus mode

Manual focus: the camera focus mode is manual; switch the camera focus mode to manual focus by pressing【focus +】 or 【focus -】 to adjust.

6、Zoom Key Zoom+: lens near, Zoom-: lens far

7、Set and clear preset

keys Set preset: save a preset, set preset + number key (0-9) to set the preset of the corresponding numberkey

Cancel preset: clear a preset, clear preset + number key (0-9) to cancel the preset of the corresponding number key

8、Gimbal control buttons

Up, down, left, and right arrows: control the gimbal to move up, down, left, and right

【HOME】 button: return the gimbal to the middle position or enter the next menu.

9、BLC on/off key: Back light compensation ON/OFF(Reserved)

10、Menu key: Open or close the OSD menu(Reserved)

11、Camera IR remote control address setting:

【*】+【#】+【F1】: Camera Address No. 1

【*】+【#】+【F2】: Camera Address No. 2

【*】+【#】+【F3】: Camera Address No. 3

【*】+【#】+【F4】: Camera Address No. 4



12、Remote control combo key

- 1)【#】+【#】+【#】:cancel all preset bits
- 2)【*】+【#】+【6】:restore factory defaults
- 3)【*】+【#】+【9】:flip switch
- 4)【*】+【#】+【7】:switch to left/right image
- 5)【F3】: Open AI single person tracking
- 6)【F4】: Turn off AI single person tracking
- 7)【#】 + 【*】 + 【6】: Start recording
- 8)【#】 + 【*】 + 【5】: Stop recording
- 9)【PRESET_SET】 + 【*】 + 【1】: Start pre-position cruise 1
- 10)【PRESET_SET】 + 【*】 + 【2】: Start pre-position cruise 2
- 11)【PRESET_SET】 + 【*】 + 【0】: Stop pre-position cruise 1
- 12)For wireless pairing, first press the pairing button on the receiver and the indicator light flashes quickly, then press F2 on the remote control facing the camera, the indicator light on the receiver is always on, and pairing is successful

Remote control use

After the device starts normally, it receives and executes infrared commands. Press the remote control button, the remote control receiving indicator light flashes, release the button, and the indicator light stops flashing. You can use the infrared remote control to set preset positions, take positions, and rotate horizontally and tilted.

Button description:

1. The button mode mentioned in this manual refers to the two actions of pressing and releasing the buttons on the remote control. For example, "press the 【HOME】 button" means pressing the 【HOME】 button and then releasing it. If you need to press the button for a long time, the manual will specifically explain it.
2. When the combination of keys described in this manual need to be operated, it means to operate in the order of the manual. For example, "press 【*】 + 【#】 + 【F1】 key" means pressing the 【*】 key first, then press 【#】, and finally press the 【F1】 key.

1)Equipment selection



Select the address number of the device to be controlled

2)PTZ control



Rotate upward: press the【▲】key

Rotate downward: press the【▼】key

Rotate left: press the【▶】key

Rotate right: press the【◀】key

Middle position: press the【HOME】key

Press and hold the up, down, left, and right rotation buttons, and the rotation will continue from slow to fast until the end of the stroke; release halfway to stop the rotation.

3)Preset setting, cancellation, and call



- 1, Save preset position: first press **【Set Preset】**, then press one of the number keys 0 ~ 9 to preset a preset position corresponding to the number key.
- 2, Note: Up to 10 preset positions can be set through the remote control.
- 3, Call preset position: directly press the number keys 0 ~ 9 to call the saved preset position.
- 4, Note: If the number key is not preset, it will be invalid.
- 5, Clear preset position: first press **【Clear Preset】**, then press one of the number keys 0 ~ 9 to cancel the corresponding preset position.
- 6, Note: Press the **【#】** key three times in a row to cancel all preset positions.

4)Zoom control



- Zoom in: Press the **【Zoom +】** key
Zoom out: Press the **【Zoom -】** key
Press and hold these two keys to zoom in/out continuously; release them to stop.

5)Focus Control



- Focus close: Press the **【Focus +】** key (valid only in manual focus mode)
Focus far: Press the **【Focus -】** key (valid only in manual focus mode)
Press and hold these two keys to continuously zoom in/out, and release them to stop.
Auto focus: supported
Manual focus: supported

6) Device infrared remote control address setting



- 【*】+【#】+【F1】**: Set address 1
【*】+【#】+【F2】: Set address 2
【*】+【#】+【F3】: Set address 3
【*】+【#】+【F4】: Set address 4

Serial communication control

When the camera is in normal operation, it can be connected to a VISCA or Pelco-D Pelco-P control device.

RS232 communication control

The camera is controlled via RS232. The RS232 serial port parameters are as follows:

Baud rate: 2400/4800/9600 bits/second;

Start bit: 1 bit;

Data bit: 8 bits;

Stop bit: 1 bit;
Parity bit: None.

RS485 communication control

Control the camera via RS485, half-duplex mode:

Baud rate: 2400/4800/9600 bits/second;

Start bit: 1 bit;

Data bit: 8 bits;

Stop bit: 1 bit;

Parity bit: None.

After power-on, the camera moves to the upper right limit position and then returns to the middle position. The zoom lens is pulled to the farthest position, the focus is automatically focused, and the aperture is adjusted to the default value. If the camera has saved the preset position 0, the camera will be set to the preset position 0 after initialization. At this point, the user can use serial port commands to control the camera.

Protocol List

(Omitted)

Note: The camera serial port complies with the standard VISCA/Pelco-D/Pelco-P protocol. If secondary development is required, the camera can be controlled according to the standard protocol. If a detailed command list of the VISCA/Pelco-D/Pelco-P protocol is required, please contact the manufacturer to obtain it.

MENU SETTING

Notice: the menu displays only two lines. Please refer to the following for specific items.

[↑ ↓] **SELECT**: press up/down arrow keys to select the menu

[← →] **MODIFY**: press left/right arrow keys to modify parameters

[MENU] **BACK**: press menu key to return/enter the menu

[HOME] **CONFIRM**: press [Home] key to confirm

MENU

Press [MENU] button to display the main menu on the normal screen, using arrow button to move the cursor to the item to be set. Press the [HOME] button to enter the corresponding sub-menu.

MENU =====	
LANGUAGE	ENGLISH
<Tracking Settings>	
<SETUP>	
<CAMERA>	
<P/T/Z>	
<VIDEO FORMAT>	
<VERSION>	
<RESTORE DEFAULT>	

LANGUAGE: Language setting, Chinese / English
SETUP: System setting
CAMERA: Camera setting
PTZ: Pan tilt setting
VIDEO FORMAT: video format setting
VERSION: camera version setting
RESTORE DEFAULT: Reset setting
[↑ ↓] **SELECT**: for selecting menu
[← →] **MODIFY**: for modify parameters
[MENU] **BACK**: Press [MENU] to return
[HOME] **CONFIRM**: Press [Home] to confirm

Trace Settings	
AI TRACK	OFF
Pan Track speed	5
Tilt Track speed	3

1.Trace Settings

Move the pointer to the <Trace Settings> in the Main Menu, click the [HOME] key and enter into the <Trace Settings> as shown below

SETUP	
=====	
PROTOCOL	AUTO
VISCA ADDR	1
V-ADDR FIX	OFF
PELCO-P ADDR	1
PELCO-D ADDR	1
BAUDRATE	9600
RS485	ON
TF REC	OFF
IP ADDR:192.168.1.123	

2. System parameter settings

Move the pointer to the <SETUP> in the Main Menu, click the **【 HOME 】** key and enter into the <SETUP> as shown below, Protocol: Protocol type, VISCA/Pelco-P/Pelco-D/Auto
 VISCA fixed address: configurable items: On/Off = On/Off
 Communication address: VISCA=1~8 Pelco-P = 1~254 Pelco-D = 0~254
 Baud rate: configurable items: 2400/4800/9600
 RS485: configurable items: On/Off = On/Off 'On': RS485 has return, 'Off': RS485 has no return; TF card recording (only supports devices with TF cards): configurable items: ON/OFF = On/Off, supports TF card recording function, supports recording in multiple time periods, supports audio recording

CAMERA	
=====	
<EXPOSURE>	
<COLOR>	
<IMAGE>	
<FOCUS>	
<NOISE REDUCTION>	
Color style	Standard
OSD DIR	OFF

3. CAMERA PARAMETER SETTING

Move the pointer to the <CAMERA> in the Main Menu, click the **【 HOME 】** key and enter the <CAMERA> as follow.
 EXPOSURE: Enter into Exposure setting
 COLOR: Enter into Color setting
 IMAGE: Enter into Image setting
 FOCUS: Enter into Focus setting
 NOISE REDUCTION: Enter into Noise reduction
 Image style: You can set several styles and other items
 Menu direction: You can set 4 options such as 90°, 180°, and 270°. After selecting, press the remote control **【Home】** to confirm and it will take effect

P/T/Z	
=====	
SPD BY ZOOM	ON
IR SPEED	10
PSPD byzoom	ON
Pro speed	8
Zoom speed	6
Pro LRSET	OFF
IMAGEFREEZING	OFF

4. PTZ

Move the cursor to <PTZ> in the main menu and press the [HOME] key to enter the PTZ page, as shown below.
 Depth of field ratio: only works for remote control, on (when the camera zooms in, the rotation speed slows down)/off
 Remote control rotation speed: set the speed of remote control rotation, 1~16
 Protocol depth of field ratio: only works for protocol control (RS232/RS422), on (when the

camera zooms in, the rotation speed slows down)/off

Protocol speed: when the protocol depth of field ratio is on, the pan/tilt speed of protocol control runs according to the

value of protocol speed as a reference

Zoom speed: the speed of camera zoom

Pan/tilt left and right settings: configurable items: On/Off = on/off. When set to ‘on’ , the protocol control controls left and right in reverse.
Image freeze: configurable items: ON/OFF = on/off. When set to ‘on’ , the previous preset position image stops until the pan/tilt moves to the next preset position display.

Version

=====

ARM VER: 14:51:49 2023-9-4

CAM VER: 0.1.0.0 2023-9-4

5. VERSION
Move the cursor to the < VERSION > in the Main Menu, click the【HOME】key and enter the < VERSION > as follow.
ARM Version: Display MCU version information

RESTORE DEFAULT

=====

RESTORE ALLNO

SET 0 PRESETNO

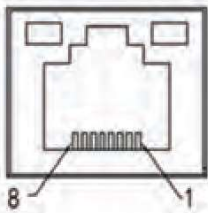
6. RESTORE DEFAULT
Move the cursor to the <RESTORE DEFAULT> in the Main Menu, click the【HOME】and enter the <RESTORE DEFAULT> as follow.
Restore default: Configurable items: Yes/No
After selecting ‘Yes’ , press [Home] to confirm

and it will take effect.
Set preset position 0: Configurable items: Yes/No After selecting ‘Yes’ , press [Home] to confirm and it will take effect .
Notice: Instructions about the menu above are for reference only, and the contents are subject to change without prior notice.

USB3.0 USAGE

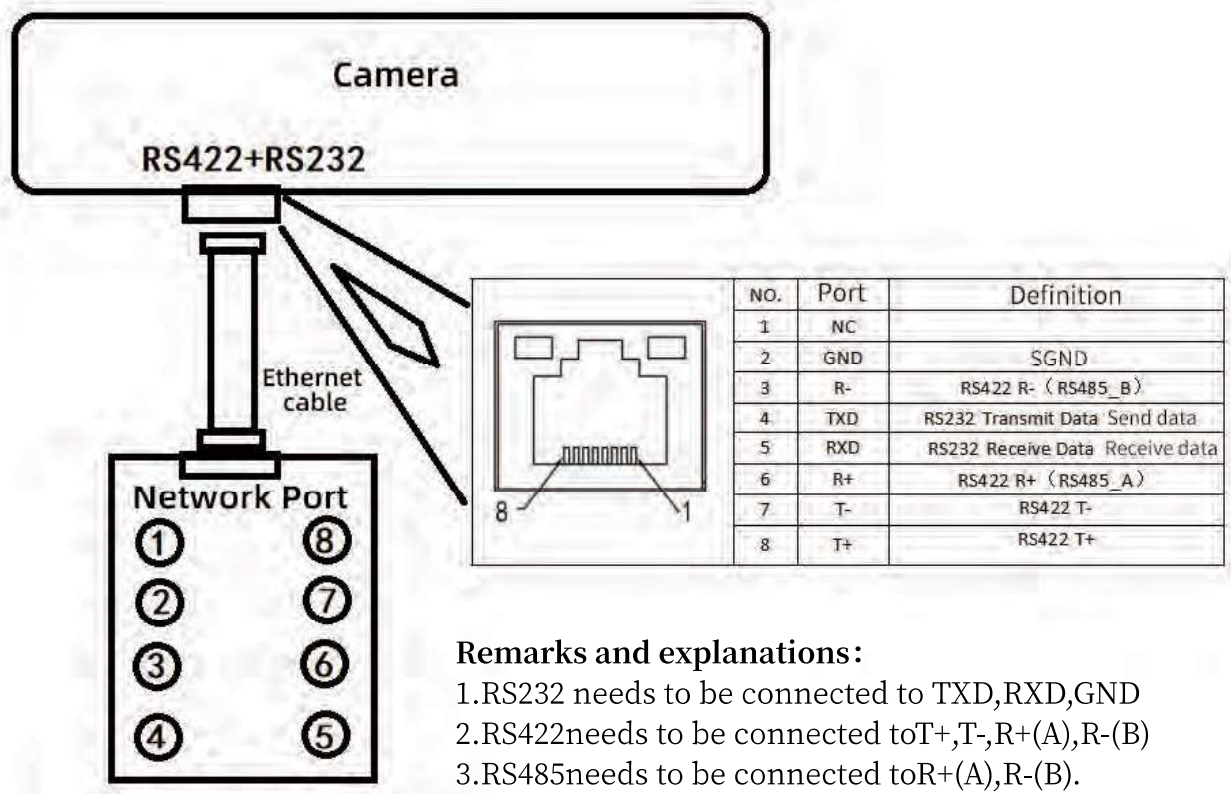
- 1.The interface to the backboard is USB3.0 B port.
- 2.Requirements for wire rods: recommend USB3.0 ultra HD extension cable, support 4K transmission.
- 3.Receive end: support USB3.0 or above.

RS42 and RS232 CONNECTING METHODS

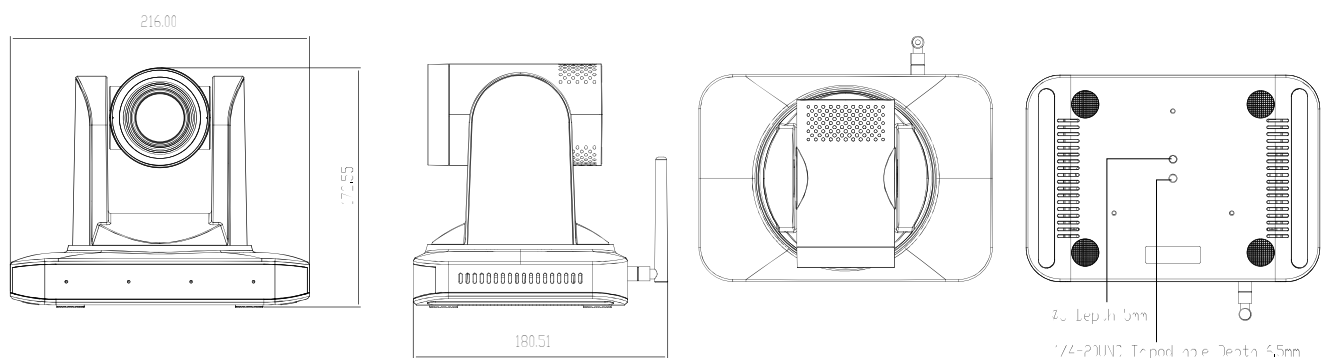


Crystal plug connection method: T568B orange-white, orange, green-white, blue, blue-white, green, brown-white, brown

Control Interface	RS232			RS485		RS422			
Interface Definition	GND	TXD	RXD	B	A	TX-	TX+	RX-	RX+
Color	Orange	Blue	Blue White	Green White	Green	Brown White	Brown	Green White	Green
Pin Number	2	4	5	3	6	7	8	3	6



Installation Size Chart



Camera Maintenance and Fault Handling

Camera Maintenance

- If camera is not used for long time, please turn off the power switch and disconnect the AC power adapter from the AC socket after use.
- Use soft cloth or tissue to clean the camera housing.
- Use soft cloth to clean the lens; use neutral cleaner to wipe gently when faced with serious surface dirt. Do not use strong or corrosive cleaner so as not to scratch the lens and affect the image.

Avoid using in the following conditions:

- The camera should avoid shooting extremely bright objects, such as sunlight, lights.
- Avoid working under unstable lighting conditions, otherwise the image will flash.
- Avoid using around facilities that emit high-powered radio waves, such as television stations or radio stations.

Fault Handling Image

1)No video output

— a, Check whether the camera power supply is connected, the voltage is normal, the power indicator is on.

b, Check Whether the camera can self-check after restarted.

c, Check whether the DIP switch at the bottom is normal

d, Check whether the cable of video platform or television is connected properly;

2)Image intermittence

—a, Check whether the video output cable or video display is in a normal state.

3)Image dithering appears when the camera lens is at the maximum magnification

—a, Check whether the camera is solidly installed.

b, Check Whether there are vibrating machinery or objects around the camera.

Remote controller cannot work

—a, Replace with a new battery

b, Check whether the battery is installed on the remote controller or low

c, Check whether the working mode of the camera is correct

d,Check whether the camera address is correct.

Serial port cannot work

—a, Check whether the working mode of the camera is correct

b, Check whether the control cable is connected properly

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Network Connection

Connection Method

Direct Connection: Direct connections via “cross-over” network cable

Connection to LAN: Connections to LAN via patch cable to LAN wall jack or LAN switch

Caution

· Please do not put the power and network cable in places where can be easily touched to prevent video quality lowered by unstable signal transmission due to poor contact of cables.

The computer must have the network segment where the camera IP address belongs to. The device will not be accessible if without the segment. I.E. The camera default IP address is 192.168.1.123, then segment 1 must be added in the computer. Specific steps are as below:

username and password:admin

Firstly open the window of Local Area Connection Properties on computer, select the “Internet protocol version 4(TCP/IPv4)” as shown by picture on the left. Double click or click the property “Internet” protocol version 4 (TCP/IPv4)to enter into the Internet Protocol Version 4(TCP/IPv4) Properties window, select “Advanced” to enter into the Advanced TCP/IP Setting and add IP and subnet mask in the IP browser as picture shown below. Click the “Confirm” to finish the adding of IP segment. User can add the corresponding network segment according to the revised IP address of the camera.

Caution

· The IP address to be added cannot be same with that of other computers or devices. The existence of this IP address needs to be verified before adding.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B 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 or more 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.

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



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