

HDMI Conference Camera

User Manual



SZXLCOM

Ver2.0+

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1、precautions

Electrical safety

Users must comply with national and regional electrical safety strictly during use.

This product has no power switch, when failure occurs, please cut off the power supply socket or the connection of power supply immediately. Video cables and control cables should be shielded wire and must be cabling separately.

Be careful with transport

Protect the products from pressure, violent vibration and soaking during transportation, storage and installation. This product will be packaged as a whole unit during transportation.

Install carefully

Please refer carefully to the user installation manual when installing. The camera parts should be handle gently, do not squeeze the structural components, or it may cause mechanical breakdown. Camera lens is an advanced optical products, do not touch it directly by hand and scratch the lens, or the image quality will be influenced.

Requirements for maintenance personnel

All installation and maintenance about this unit should be operated by professional maintenance technicians or designated professionals.

Do not remove camera and protective cover without authorization

Do not remove the camera and protective cover without authorization, all the maintenance should be handled by professional maintenance technicians.

Environmental requirements

The using environment requirements of ball machine:

Temperature: $-10^{\circ}\text{C}\sim+50^{\circ}\text{C}$ Humidity: $<95\%$

Air pressure: $86\text{Kpa}\sim 106\text{Kpa}$ Input Voltage: $\text{DC}12\text{V}\pm 1\text{A}$

Maximum power: 12W (DC12V)

Do not aim the camera at lighting objects

Do not aim the camera at a lighting object. It cannot be aimed at the sun or other high brightness object when it's using or not, as it may cause image blurring or halo, even permanent damage to the lens.

2、 performance characteristics

(1) 、 Camera technical parameters

Electrical		Communication	
Input voltage	DC12V	Band	9600bps
Power	12W	protocol	Visca&Pelco D
Decoder	built-in	Address settings	1~7
Operation		Environment	
Horizontal rotation	±170°	Operating environment	-10°~+50°
Vertical rotation	120°	Environment humidity	0~95%
Rotational speed	Horizontal 0.4°~100°/s		No condensation
Physical		Installation Method	
Preset points	9 remote controls Pelco Protocol Support 255	Support desktop , wall mount , ceiling mount , tripod installation	
Net-Weight	1.02kg		

(2) 、 Camera parameters

Model Spec	XL-HD20HDMI
Image Sensor	1/2.9-inch HD color CMOS
effective Pixel	2.1 million pixel
Lens	20X optical zoom
Focal length	F=4.7-94.0mm
Angle of view	H: 54.8° (W) ~3.4° (T) V: 41° (W) ~2.5° (T)
Minimum illumination	1.0Lx
Gain	auto
Focus	auto/manual
SNR	50 dB and above
Shutter speed	1/ 1to1/ 10, 000
Preset	255 sets
Pan / Pitch Angle	-170 degrees ~ 170 degrees -30 degrees ~ 90 degrees
Pan / Pitch Speed	100degrees/s 80degrees/s
Control mode	RS-232,RS-485
Control Protocol	VISCA,PELCO-D/P(RS-232,RS485)
UVC	Support UVC1.1~UVC1.5
HD format	1080P30/25, 1080i60/50,720P60/50,720P30/25
HD output interface	HDMI1.4,USB
Operating temperature	-10 degrees to 50 degrees
Power supply	DC12V/1A

(3) 、 Technical specifications

Description: The technical parameters will be different if input different video cameras.

➤ System

- Video signal: 1080P30/25, 1080i60/50,720P60/50,720P30/25
- Effective pixels: 2.1 million pixels
- Video SNR:50dB
- Panorama shot/Incline shot action: Horizontal±170 degrees, Maximum speed: 100 degrees/s; Vertical:+90°, -30°, Maximum speed 80°/s

➤ Input/output interface

- Video output:HDMI&USB
- Control interface: VISCA RS-232C:8 MICROCHIP-DIN, RS-485
- Control signal format: 9600bps data: 8bit, stop bit: 1
- Power interface: JEITA Type 4

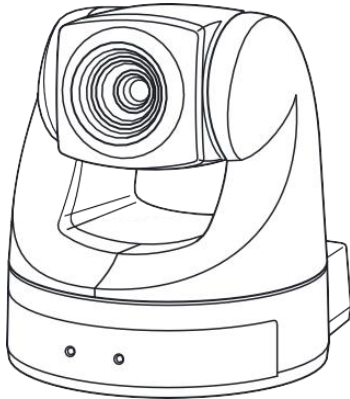
➤ Characteristic

- High-speed, wide-angle PAN/TITL (Panorama shot/Incline shot) function.
- The video conferencing terminal and the computer can be controlled by using an external RS-232C communication system and VISCA commands.
- The camera can be fully controlled via the USB port.
- Up to 9 camera presets can be reserved in memory unit and can be called when needed.
- Provides an infrared multi-function remote control that helps easy and quick control of video conferencing.

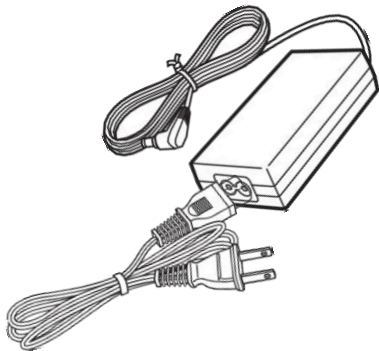
3、 Supplied Accessories

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

Camera (1)



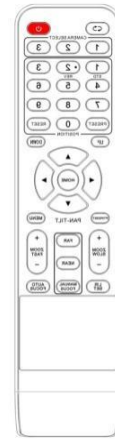
AC power adaptor (1)



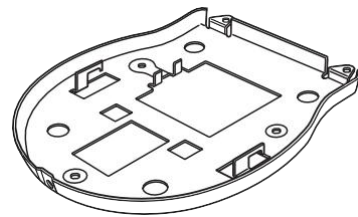
VISCA cable (1)



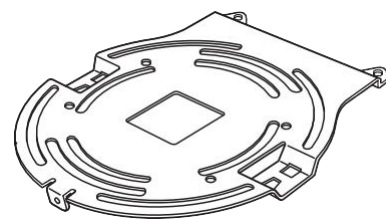
Remote commander (1)



Ceiling bracket (A) (1)



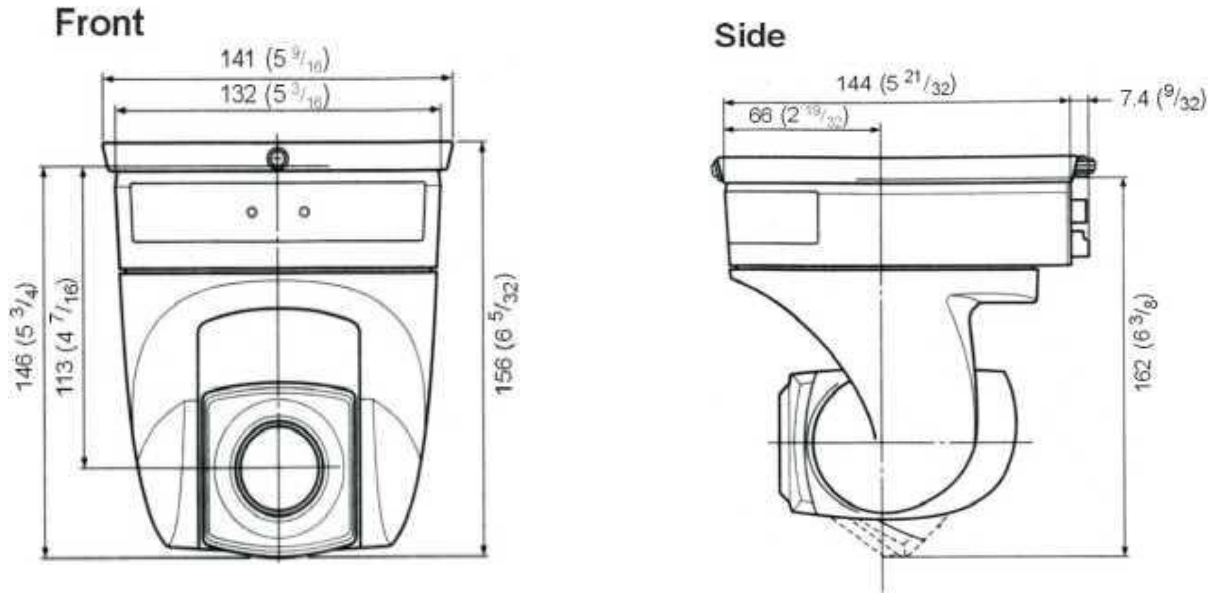
Ceiling bracket (B) (1)



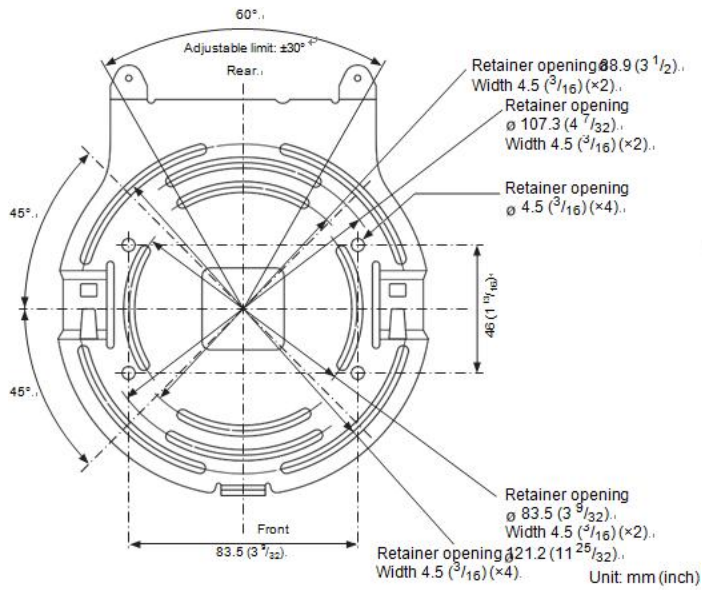
Screw 3M 3×6 (6)



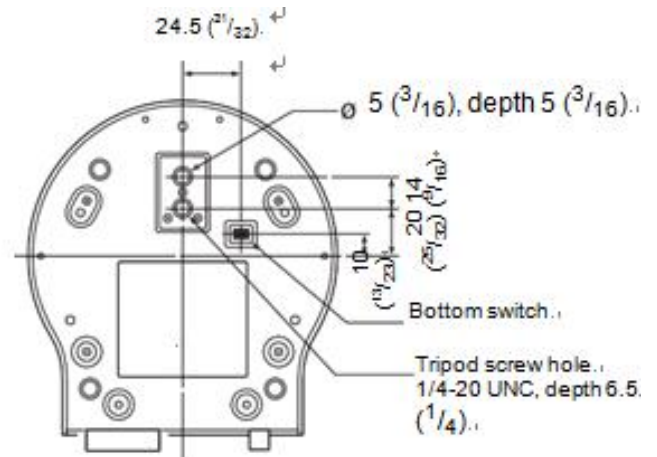
4、Dimensions



Ceiling bracket (B)



Bottom



5、 Installing the unit on the ceiling

Using the ceiling bracket, and retaining screws supplied, to attach the camera to the ceiling.

When you install the unit, always install it on a level ceiling. If you have to install it on a sloping or uneven ceiling, make sure that the place where you install it is within ± 15 degrees of the horizontal.

Notes

If you attach the unit to the ceiling, entrust the installation to an experienced contractor or installer.

If you install the unit on the ceiling, be sure the ceiling is strong enough to withstand the weight of the camera plus the ceiling bracket.

If the ceiling is not strong enough, the unit may fall and cause serious injury.

If you attach the unit to the ceiling, check periodically, at least once year, to ensure that the connection has not loosened. If conditions warrant, make this periodic check more frequently.

Before installation

After deciding the direction in which the camera will shoot, make the required holes.

(1) 、 Attach the ceiling bracket (B) to the ceiling.

Align the holes in the bracket with those in the ceiling, and use appropriate screws (not supplied).

There are elongated holes for the screws along the rounded edges of the ceiling bracket (B). Later, the front of the camera will be positioned along this edge. Face the camera to the front, adjust the aim, and attach it securely.

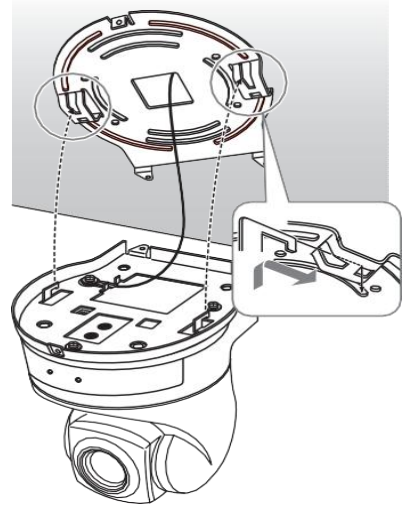
(2) 、 Attach the ceiling bracket (A) to the bottom of the camera using the 3 screws (3M 3*6) supplied.

Align the screw holes on the bottom of the camera with those in the ceiling bracket, and attach the bracket to the camera.

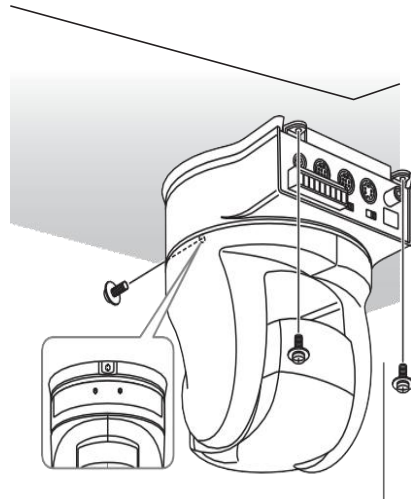
Note

For assembly, use only the screws supplied with the unit. Using other screws may damage the unit.

(3) 、 Insert the protrusions raised on the ceiling bracket (A) into the spaces prepared in the ceiling bracket (B), and temporarily attach them by pushing the ceiling bracket (A) to the rear.



(4) 、 While pushing up on the front part of the camera, attach it using the three screws provided (3M 3*6).

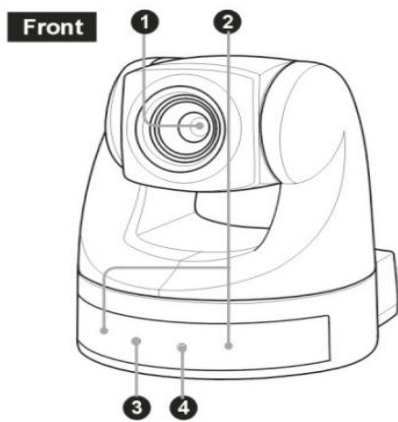


(5) 、 Set the IMAGE FLIP switch on the rear panel to ON.

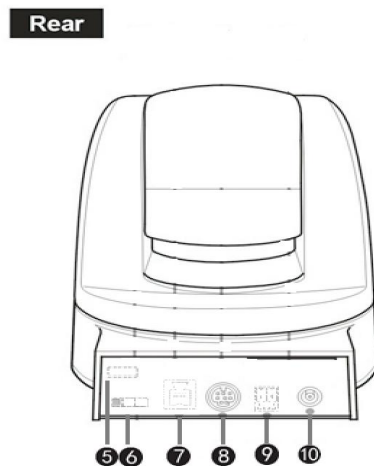
Notes

- If you set the IMAGE FLIP switch to ON after turning on the power, the image will not be flipped. Turn the power off once, then on again, and the image will be flipped. It may take as long as 7 seconds for the image to appear with the correct orientation.
- When you toggle the IMAGE FLIP switch, the pre-set settings will all be returned to the initial settings.

6、 Locations of Controls



- ① Lens(A wide conversion lens can be attached.)
- ② Sensor for the Remote Commander
- ③ POWER lamp
- ④ STANDBY lamp



- ⑤ HDMI interface
- ⑥ IR SELECT switch
- ⑦ USB interface
- ⑧ VISCA RS-232C connector
- ⑨ RS-485C connector
- ⑩ DC IN 12V connector

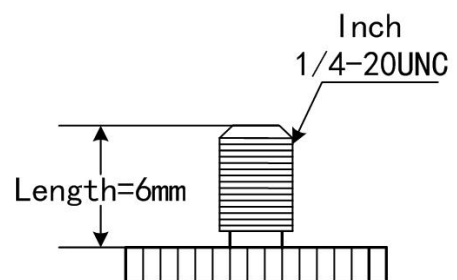
Installation instructions

(1)、 Flat installation

Keep the camera horizontal placement when it is mounted on a platform. If the camera must be placed on a tilted surface, whether it is a desktop or ceiling installing, make sure the tilt angle is less than 15 degrees, to ensure that the camera rotates horizontally and vertically well.

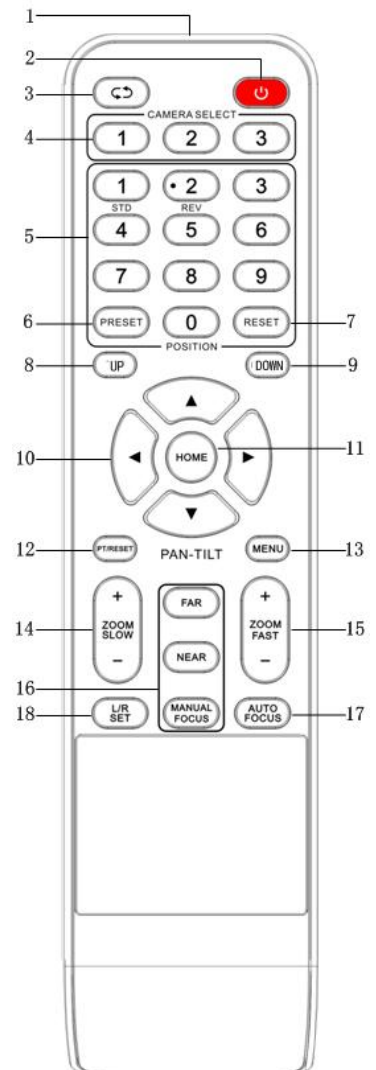
(2)、 Tripod installation

To place the camera on a tripod, always use eligible screws. The tripod must be placed on a flat surface and can load the required weight.



7、 Remote control key note

1. Remote control transmission window;
2. **【POWER】** :Standby key, press the camera into standby mode, press the camera again will turn on;
3. Mirror image, same as function ⑧ (P/T RESET)
4. **【CAMERA SELECT】**: Select the camera number, corresponding to the dial code of the bottom of the camera;
5. **【POSITION】** Set preset bit or call preset bit;
6. **【PRESET】** PRESET + number key to set the preset for the number; While holding down the Preset button, press any of the Position buttons, 1 – 9.
7. **【RESET】** RESET+digit key to clear the preset; While holding down the Reset button, press any of the Position buttons, 1 – 9.
8. **【UP】** : Image vertical flip;
9. **【DOWN】** : image returns to the formal;
10. **【PAN-TILT】** Camera turns the control key, when pressed, turn in the direction indicated by the arrow.
11. **【HOME】** Press **【HOME】** to return to the vertical and horizontal center position;
12. **【P/T RESET】** Mirror image ;
13. **【MENU】** Press to enter or exit OSD menu.
14. Slow zoom key
【ZOOM SLOW +】 : slowly pull away the lens
【ZOOM SLOW -】 : slowly push faraway the lens
15. Fast zoom key;
【ZOOM FAST +】 : Quick pull away the lens
【ZOOM FAST -】 : Quick push faraway the lens
16. Manual Focus Mode Key
【MANUAL FOCUS】 : Start manual focus function;
- 【FAR】** : Manually gather slot key, so that the distant object sharper, let go of the stop;



【NEAR】 : Manual close-focus key. To make the near object clearer, let go of the hand to stop;

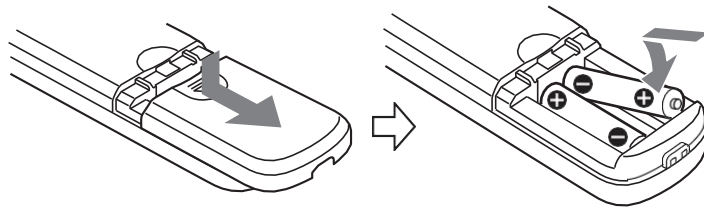
17. 【AUTO FOCUS】 : Auto Focus Key;

18. 【L/R DIRECTION/SET】 : press this function key first, and then

Press 1(STD) to set the camera to rotate left and right in the right direction

Press 2(REV) to set the camera to reverse the direction of rotation left and right

Installing batteries



R6(size AA)* 2 (not supplied)

Notes on use of the Remote Commander

If the Remote Commander does not work properly, change the batteries.

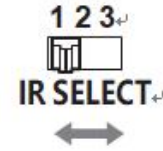
If there are objects between the Remote Commander and the sensor for the Remote Commander on the unit, the unit may not function properly, so point the Remote Commander directly at the sensors on the front or back of the unit when you operate it.

8、 Common operating instructions

(1) 、 Camera selection

Operating more than one camera with the Remote Commander

Set the IR SELECT switch (at the rear of the main unit) of the camera(s) which you intend to operate to 1, 2 or 3.



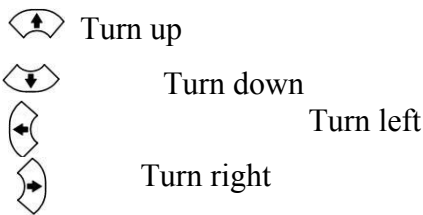
The dip switch at the camera rear: Acquiescence is 1

Press a CAMERA SELECT button (on the Remote Commander) which corresponds to the number set in step 1.



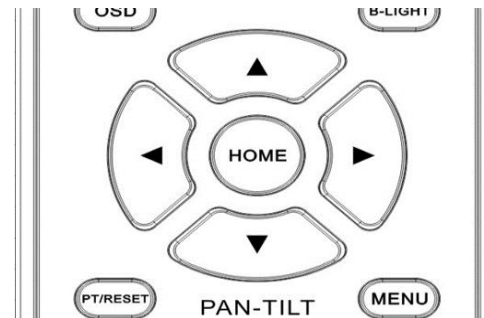
Then, you can operate the camera(s) specified by number. Every time you operate the camera(s) using the Remote Commander, the CAMERA SELECT button pressed in step 2 lights up.

(2) 、 Camera direction control



Note

Press the arrow keys to change the direction of the camera. When you need to change the camera angle of view, press the desired direction key. To move the camera slowly, simply tap the arrow keys; And to move the camera quickly over a wide range of areas, press and hold on the arrow keys.



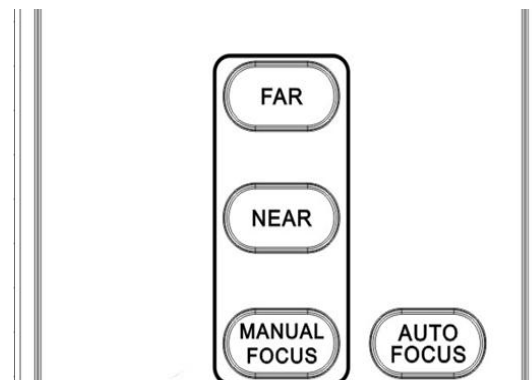
(3) 、 Camera focus mode control

【MANUAL FOCUS】: Switch camera focus mode to Manual

【FAR】 : Manually focus far length

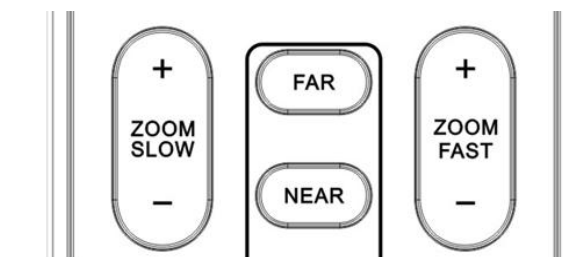
【NEAR】: Manually focus near length

【AUTO FOCUS】 : Switch camera focus mode to Auto



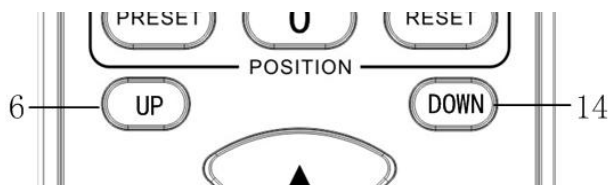
(4) 、 Camera zoom control

Fast and slow-change function slots by pressing one of the four **【ZOOM】** keys (some models support fast and slow).



(5) 、 Image filp

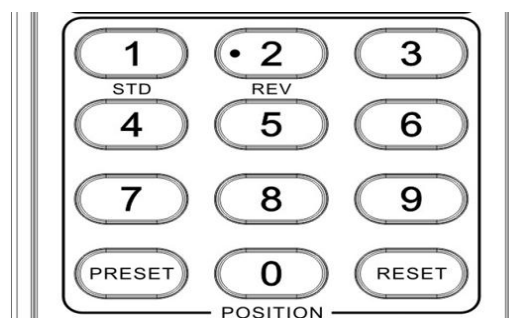
Press **【UP】** key, Image inversion;
Press **【DOWN】** key, image returns to the formal。



(6) 、 Having the Camera Memorize the Setting

1.Adjust the position, the zooming, the focusing, and the back lighting of the camera.

2.While holding down the **【PRESET】** button, press any of the POSITION buttons, 1–9.



(7) 、 Recalling the memorized setting

Press any of the POSITION buttons 1 – 9 on which your settings have been saved.

(8) 、 Canceling the preset memory

While holding down the **【RESET】** button, press the POSITION button on which the settings are to be canceled.

9、 Menu

You can view and change the parameters of the current camera through the on-screen menu display;



Press the [MENU] key of the remote control to enter the main menu of the camera;



Select different menu items through  /  /  /  on the remote control and press the [HOME] key to confirm.

Level 1 Menu ---- Main Menu

Main Menu		



Language		English
Image		->
Exposure		->
Color		->
Reset		No
Exit	Save	No

Language: Chinese/English can be selected. Press  /  the arrow key to switch between Chinese and English.

Reset: Restore the factory default values of exposure and color. Press  /  the arrow key to select "Yes" or "No", and press the [HOME] key to confirm.

Parameter modification: "Yes" to save the modified parameters.

"No" do not save the modified parameters.

Press  /  the arrow key to select "Yes" or "No", Press the [HOME] key to confirm.

Secondary menu ---- image

Image	

Flip	OFF
Mirror	OFF
Resolution	1080P30
Back	



Flip: the image flips up and down. Press  /  the arrow key to switch.

Mirror: The image is mirrored left and right. Press  /  the arrow key to switch.

Video format: factory default value is 1080P30. Press  /  the arrow key to switch.

Secondary menu ---- exposure



Exposure	
Brightness	32
Flicker	50Hz
Back	

Brightness: adjust the brightness of the image; Press  /  the arrow key to switch between light and dark values.

Anti-flicker: optional 50Hz/60Hz for anti-flicker of power line.

Secondary menu ---- color

Color	
Contrast	32
Hue	32
Saturation	32
Sharpness	32
WB Mode	AUTO
Color temp	5600
Back	

Contrast: dynamically adjust the image contrast. Press  /  the arrow key to change the option value, the same below.

Hue: adjust the relative light and dark degree of the pattern, and show it as color on the color image;

Saturation: adjust the image color effect;

Sharpness: adjust the sharpness of image edges;

White balance: manual/automatic white balance selection;

White balance value: select the corresponding white balance value in manual mode.

10、 Troubleshooting

Before request service to serviceman, it can according to below methods to remove failures, if still can't be solved, please contact us for help.

Q:The video of camera cannot be displayed on the screen.

A:Please check the connection between power cable,video cable, camera and monitor, fix the connector on each end.

The default resolution of HDMI output is 1080P30. If there is no image on the display device when HDMI is connected, you can use USB to connect to the computer and check and modify whether the resolution of the image is consistent with your display device through AMcap software.

Q: Why the camera rotates for about 20 seconds after power on.

A:This is the normal self-test of the camera.

Q: Poor Image quality while using in church or other low-light conditions.

A:1 Arr ange the church lighting properly

Q:Remote control is not working or insensitive

A: 1、 Not work, please replace batteries.

2、 Not sensitive: 1 Choose the correct “IR select” number to meets camera. 2 Control the camera within 15m 3 Remove the obstacles 4 Aim at the sensor which is in front of the camera when controlling it.

Q: USB interface is not identifiable.

A: Please check USB cable and extension cable are well connected or not. If yes, change to another USB interface and try to connect again.

Q:It was not been controlled via RS232/RS485 when camera connect to PC.

A: Make sure it is a correct connection between camera and PC. (Reference to RS-422/485 and RS232 Pins distribution in next page.)

Q:Why no wall mount brackets?

A: Camera comes with ceiling mount, wall mount or tripod brackets needs to buy separately.

Q: Does this camera has built-in mic?

A: No, our cameras comes with no built-in mic.

Q:Can we control the camera only by the remote control?

A: We can control the camera by remote control. Keyboard controller (joystick), and software.

11、 Precautions

After operating the unit with an AC power adaptor, disconnect the AC power adaptor from the wall outlet if the set is not to be used for an extended period of time.

Brightness of a Subject

Color Video Camera might not work at its best in a place where the brightness exceeds the illumination range (such as a place exposed to direct sunlight)

Avoid Specialized Application

- *Do not shoot an extremely bright object such as sunlight or a lamp.
- *Do not use the camera around a facility which transmits powerful radio waves such as a TV or radio transmitter.
- *Do not use the camera under unstable lighting conditions. Otherwise, screen flickering may occur.

Precaution on Copyright

Television programs, pictures, magazines, and other materials may be copyrighted. Unauthorized recording or storing of such materials violates the provision of the copyright laws.

Maintenance

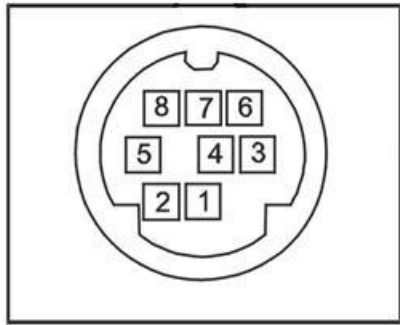
Clean dirt and soil from the cover with a soft cloth or tissue paper.

12、 Cleaning the main unit

- *When the body of the camera is dirty, clean it with a soft cloth that is soaked with a diluted neutral detergent and tightly wrung. Then finish with a dry cloth.
 - *Do not use any type of solvents, which may damage the finish.
- When you use a chemical cloth, follow its instructions.
- *Do not sprinkle volatile matter such as pesticide over your Color Video Camera nor allow rubber or vinyl to come in contact with the Color Video Camera for a long period of time. Doing so may damage the finish.

13、 Control interface

(1) 、 VISCA RS-232 :



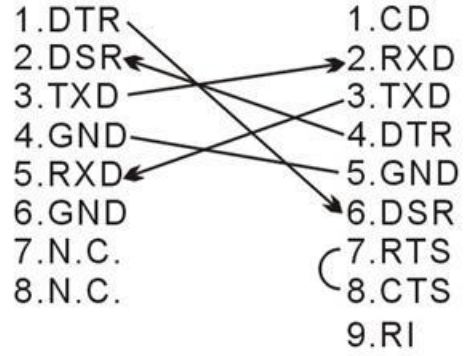
VISCA RS-232

VISCA RS-232

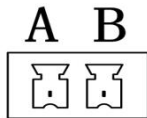
- 1.DTR
- 2.DSR
- 3.TXD
- 4.GND
- 5.RXD
- 6.GND
- 7.N.C.
- 8.N.C.

PC RS-232

- 1.CD
- 2.RXD
- 3.TXD
- 4.DTR
- 5.GND
- 6.DSR
- 7.RTS
- 8.CTS
- 9.RI



(2) 、 RS-485

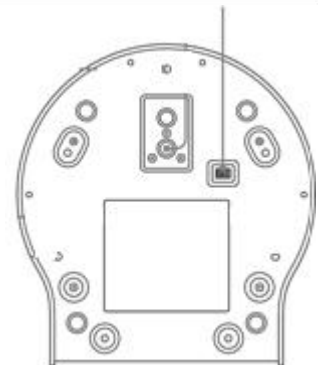
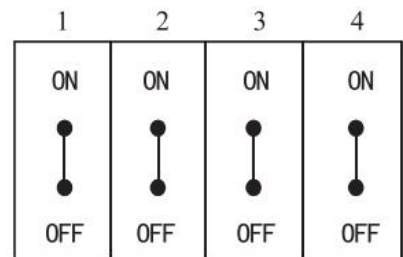


Port	Connect
A	Tb
B	Ta

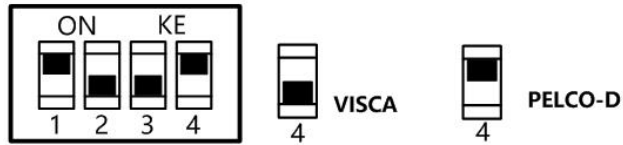
Camera Settin : address: 1; Protocol: VISCA ; Baud rate: 9600.

(3) 、 BOTTOM Switch Function

Factory default of camera: communication protocol VISCA, address 1, baud rate 9600 (bottom dip switch all OFF)



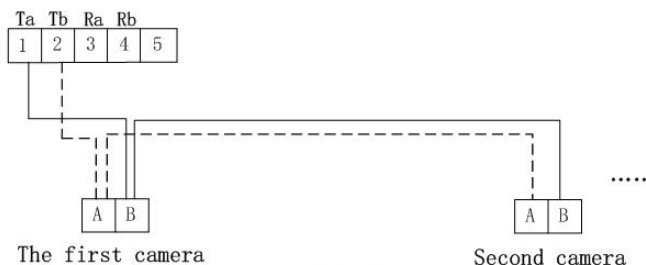
When you use the VISCA protocol, you can only control one camera. If you want to control multiple cameras (less than 7 cameras), you should use PELCO-D protocol. At this time, the bottom dip switch 4 is set to ON, and dip switch 1-3 sets the camera address. The following figure:



PTZ Add.	DIP-1	DIP-2	DIP-3
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	ON	OFF
4	OFF	OFF	ON
5	ON	OFF	ON
6	OFF	ON	ON
7	ON	ON	ON

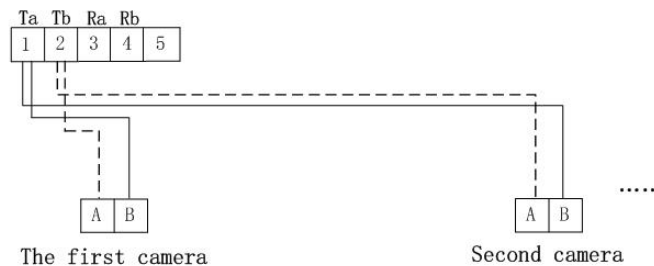
The control device is connected to the camera through RS485, which can be connected in series or in parallel, as shown in the following figure:

Control equipment



Series

Control equipment



Connect in a parallel

