FastCam III

PTZWO-220 PTZ Dome Camera

User Manual

Version: V1.2

Doc. No.: 2006120401

iview
A Safe Life

1. Instructions:

As stated in the warranty instruction, when a breakdown occurs to the properly used product, the product under warranty will be granted free maintenance or spare parts replacement. Do not dismantle and repair the unit without the company's authorization.

Within one year from the purchase date, if any damage or breakdown occurs to the product (excluding housing, bracket and external wires) when it is properly used, we will provide free maintenance or spare parts replacement after our technician confirms the case.

No free maintenance under the following circumstances:

1. Damage or breakdown arising from the dismantling and repairing of the unit without the company's authorization;
2. Damage or breakdown arising from the client's arranged transportation, loading or unloading of the unit;
3. Damage or breakdown arising from using and maintenance of the unit without observing the instructions in the User's Manual, including damage or breakdown arising from crashing, crushing, and unit affected with damp, liquids, corrosive or other man-made causes.
4. Damage or breakdown arising from inapplicable ambient temperature or overloaded operation; surface abrasion or damage emerging when the unit is used;
5. Damage or breakdown arising from natural disasters and other accidents.

Attention: To realize all the functions of the unit, a compatibility test must be carried out before applying other manufacturer's spare parts in the system.

1-1 Product Package Content

Please check the package content by the following list.

- Glove x 1 pcs
- User Manual x 1 pcs
- Camera Cover x 1 pcs
- Wall Mount Bracket x 1pcs
- Power adapter x 1 pcs

2. The Characteristics description:

1. The design of the outer housing of the Constant Speed Dome Camera is reasonable, elegant and practical. The outer housing can endure long-term operation without distortion.
2. The function of pan/tilt movement is realized by photoelectrical sensors, which avoids the limitations of traditional mechanical movement devices.
3. The operation is based on advanced motors and circuits, characterized by smooth, long-term running, durability and reliability.
4. The User can use the joystick of the keyboard to adjust the speed of the unit according to actual conditions.
5. Left/right positions can be setup on the dome camera panel, or through the keyboard in the controlling room.
6. The installation of the unit is fast, convenient and more human, which greatly reduces the inconvenience in installation.
7. The unique wall bracket installing style enables the placing of the special power device inside the bracket.
8. The built-in PCB panel supports three mainstream protocols, and many more protocols can be input according to the customer's needs. The Baud rate is also adjustable.
9. The unit adopts DC12V power supply and separates from it those heat-producing components in the process of transformation, which prolongs the durability of the unit. The unit possesses the functions of anti-jamming and anti-crashing. It also features memory function, which enables the unit to automatically resume the last-time operated condition once supply of power is on after the power-off state.
10. *10 The unit has one default position; the user can preset the default position for a key monitoring area according to the actual conditions. If not operated after 10 minutes, the dome camera will automatically monitor the preset position.

The function of item 10 can only be realized when the protocol adopted supports the keyboard of this company. Also, the user can include our protocols into the DVR or existing software.

3. Major Technical Data：

3.1. Electric:

Power supply: DC12V/3A
Dome motor: DC12V/0.5A
Camera lens motor: DC12V/100mA
Camera power supply: 12V/1A
Heater and Fan: 2V/1A
Temperature controlling devices ambient: fan, 50℃; heater, 5℃ (Option)
Temperature controlling devices operating voltage: DC12V
ID Address: 1～63
OSD: Yes
Communication interface: RS485 bus
Communication protocol: Multi protocols
Baud rate: 1200bps, 2400bps, 4800bps, 9600bps (adjustable)
Controlling device: DVR or Joystick keyboard

3.2. Mechanical:

Dome movement: pan 0°-356°, tilt 0°-90°.
Dome speed: pan/tilt pan adjustable with 6º, 9º, 12º and 15º.
Movement control: pan adjustable within the dome movement scope
Compatible video camera and lens size:
Seven-inch Constant Speed Dome Camera: 140（L）×70（H）×70（W）mm

3.3. Operation temperature:

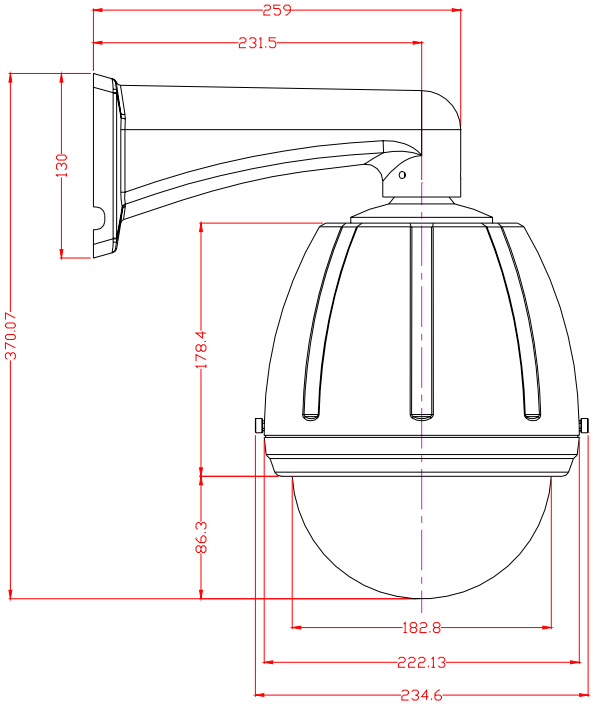
0ºC～50ºC (without temperature controlling devices)
-35ºC～50ºC (with temperature controlling devices)
Relative Humidity: 90%RH

3.4. Camera specification:

- **Sensor:** 1/4 SONY Super HAD CCD sensor
- **Resolution:** 420 TV Lines
- **Video System:** NTSC (PTZWO-220N), PAL (PTZWO-220P)
- **S/N Ratio:** More than 48 dB
- **Min Illumination:** 0.5 Lux.
- **Optical Zoom:** 22X (3.9-85.5mm)
- **Day/Night:** Yes (IR Cut)
- **Video Output:** BNC Connector 75 Ohm
- **Electronic shutter:** 1/60- 1/10000 (NTSC), 1/60- 1/10000 (PAL)
- **White Balance:** Auto
- **Gain Control:** Auto
- **Back light compensation:** On/ Off selectable
- **Power:** DC12V/400mA
- **Size:** 60x60x103 mm
- **Weight:** 0.35Kg

4. Installation Procedures

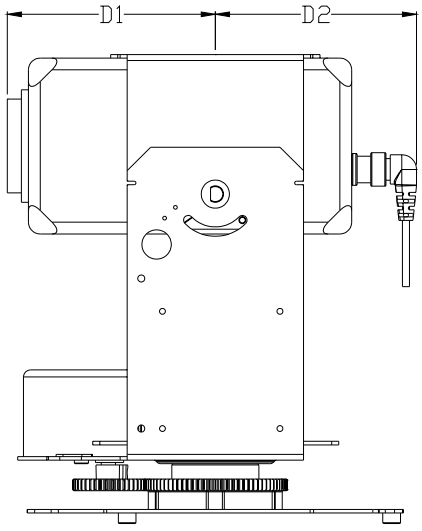
4.1 Dimension of 7-inch Constant Speed Dome Camera



4.2. Installation of Video Camera

Step 1. Make sure the size the selected video camera is compatible. Then follow the direction indicated on the camera suspender, and fix the camera to it with special screws. Make the length in the front and the back of the camera equal (D1=D2). (Refer to the figure below.) When used there should be no collision or friction between the camera and the vitreous cover. If there is any, adjust the camera.

Direction for Camera installation



Step 2. Connecting Video Controlling Cable of the Camera Lens

Please connect video controlling cable of the camera lens provided by the camera supporter, following the corresponding relationship between the camera and the outlet of PCB panel shown in the following table.

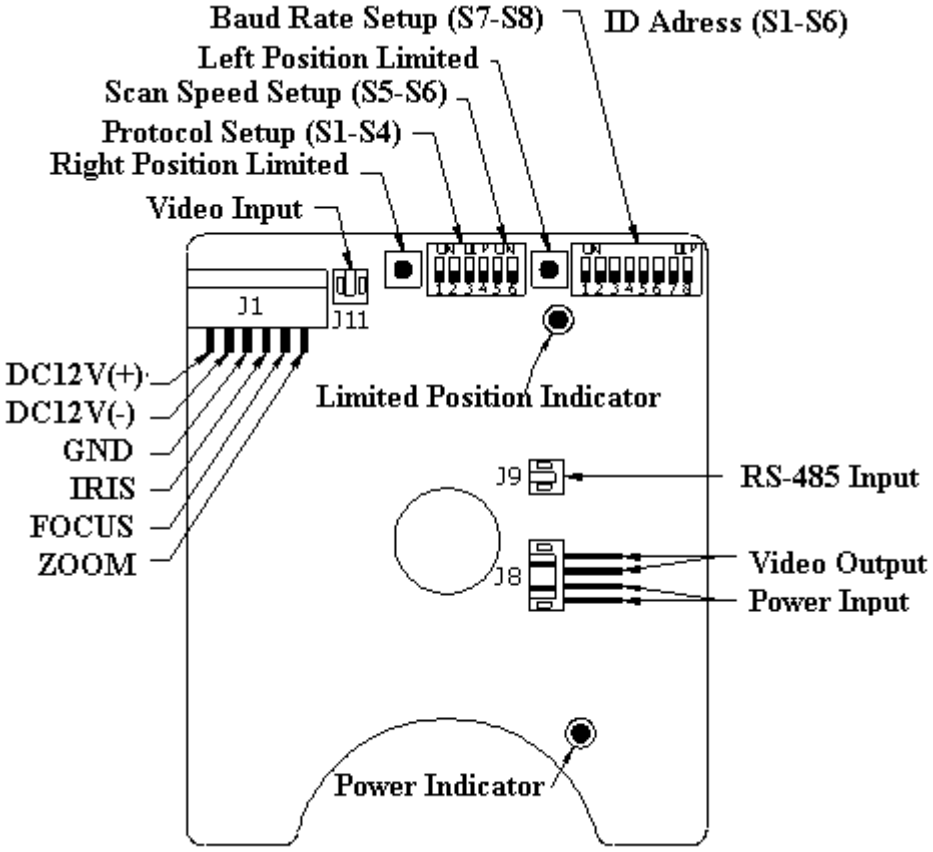
Controlling signal of the camera lens	**Corresponding outlet on PCB panel**
Camera power supply DC12V	+12V 、GND
Zoom	ZOOM
Focus	FOCUS
Iris	IRIS
Controlling common controlling	COM

Step 3. Connecting Video Cable

Connect BNC video outlet with the video output outlet of the camera, then tie the video cable inside the camera and lens cable into the hole beside the lens connecting outlet on the PCB panel. After installing the camera, please setup communication protocol, Baud rate, address, etc.

4.3. The Description of Controller Board

The dome camera has built-in Controller Board and the function description as below:



Switches of Controller Board

4.3.1. Address Setting

As shown in the figure below, DIP-1 to DIP-6 of SW1 is used to setup address of the dome camera from 1 to 63. The state "**ON**" of each bit means "**1**" while"**OFF**"means"**0**". Table 2 shows states of Dipswitches.

Table 2：Correspondence of Address and Dip Switches

No.	DIP 654321	No.	DIP 654321	No.	DIP 654321	No.	DIP 654321
1	000001	**18**	010010	**35**	100011	**52**	110100
2	000010	**19**	010011	**36**	100100	**53**	110101
3	000011	**20**	010100	**37**	100101	**54**	110110
4	000100	**21**	010101	**38**	100110	**55**	110111
5	000101	**22**	010110	**39**	100111	**56**	111000
6	000110	**23**	010111	**40**	101000	**57**	111001
7	000111	**24**	011000	**41**	101001	**58**	111010
8	001000	**25**	011001	**42**	101010	**59**	111011
9	001001	**26**	011010	**43**	101011	**60**	111100
10	001010	**27**	011011	**44**	101100	**61**	111101
11	001011	**28**	011100	**45**	101101	**62**	111110
12	001100	**29**	011101	**46**	101110	**63**	111111
13	001101	**30**	011110	**47**	101111		
14	001110	**31**	011111	**48**	110000		
15	001111	**32**	100000	**49**	110001		
16	010000	**33**	100001	**50**	110010		
17	010001	**34**	100010	**51**	110011		

The default ID address is 1.

4.3.2. Baud Rate Setting

As shown in the above figure, DIP-7 and DIP-8 of SW1 is used to setup Baud rate of communication and 4 different Baud rate can be selected (1200BPS/2400BPS/4800BPS/ 9600BPS). Following table shows states of coding switches of baud rate. The state "ON" of each bit means"1", while"OFF"means"0". Table 3 shows states of correspondence of Baud rate and DIP Switches.

Table 3：Correspondence of Baud Rate and dip Switches

Switches	1200 bps	2400 bps	4800 bps	9600 bps
No. 7	OFF	ON	OFF	ON
No. 8	OFF	OFF	ON	ON

1. **The default Baud Rate is 96900bps.**
2. **If you use the default setting, please select camera 1 when uses the I-View's DVR and select camera 0 when connects Joystick Keyboard directly.**

4.3.3. Setup Protocol

As indicated in the above figure, DIP-1 and DIP-2 of SW2 is used to setup protocol of the dome camera. The built-in PCB panel provides protocols as listed in Table 4. Other protocols can also be read-in as the user requires.

Table 4 Correspondence of Coding Switches and Protocols.

No.	Dip 4321	Protocol
1	0 0 0 0	PELCO_D
2	0 0 0 1	PELCO_P
3	0 0 1 0	VICON
4	0 0 1 1	PELCON
5	0 1 0 0	KALATEL-312
6	0 1 0 1	CCR-20G
7	0 1 1 0	ADR-8060
8	0 1 1 1	HY
9	1 0 0 0	M800-CIA
10	1 0 0 1	PANASONIC
11	1 0 1 0	LILIN
12	1 0 1 1	KRE-301
13	1 1 0 0	WISDOM
14	1 1 0 1	RM110

The default Protocol is Pelco P.

4.3.4. Setup Movement Speed

The movement speed of the dome can be setup through the coding switch.

DIP 5and DIP6 of the 6-button coding switch (see figure above) are used to setup the movement speed of the dome. Please refer details to Table 5.

Table 5 Movement Speed table

No.	DIP: 5 6	Moving speed
1	00	6°
2	10	9°
3	01	12°
4	11	15°

The default moving speed is Protocol is15°.

4.4. Connect the camera and Housing of Dome Camera

Please follow up the process to fix the camera into the camera housing as below:

Step 1. Push the power cable, video cable and controlling cable through the central hole of the peg-board, and then bring into contact the parts shown with dotted lines on the camera and the indentation in the peg-board. (Refer to **Fig 4.4-1**)

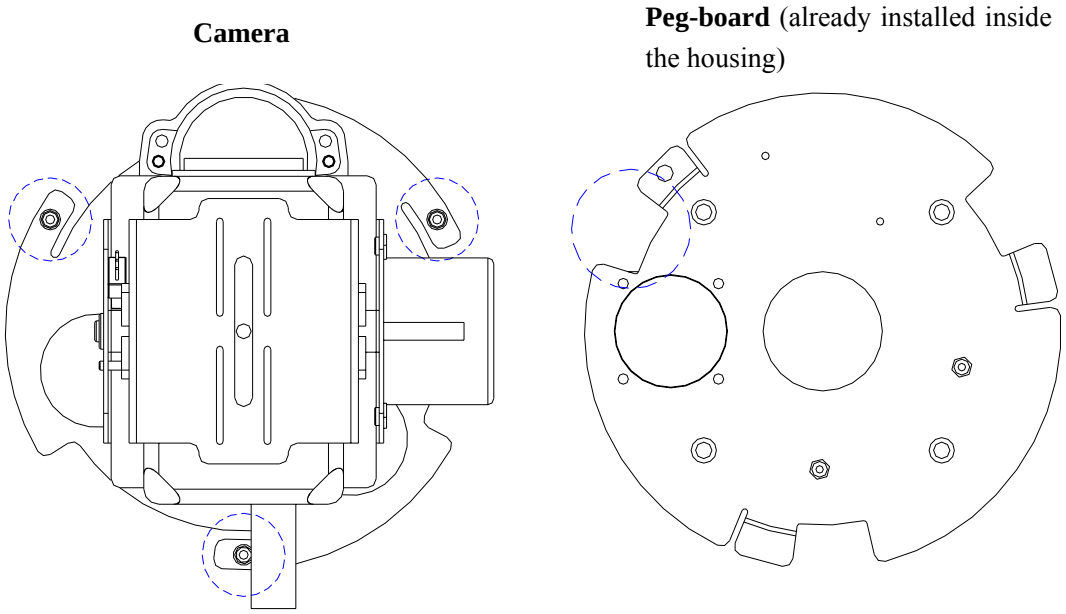


Fig 4.4-1

Step 2. Hold the camera, and then turn it to the arrow sign for about 20 degrees till it stops moving, making sure the installing pegs are in right positions. (Refer to **Fig 4.4-2**)

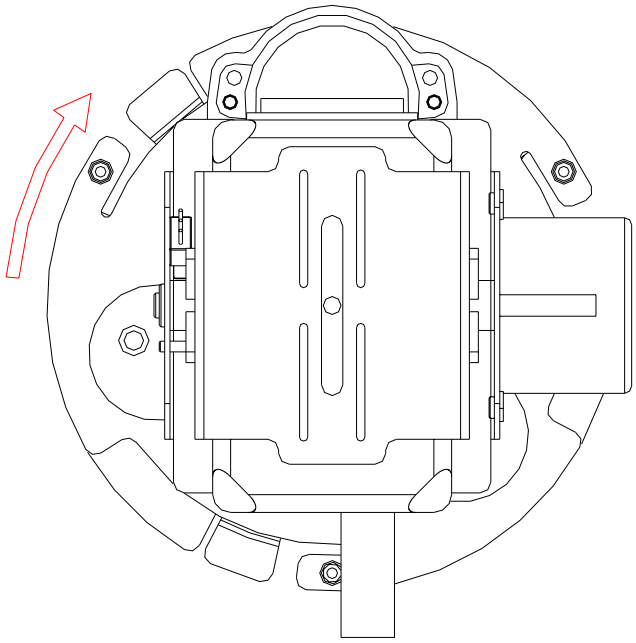


Fig 4.4-2

Step 3. After the camera is in right position, tighten the special screws manually or with a screwdriver. Be sure the screws are tight; otherwise, the camera might fall when used. Installation of the camera completed. (Refer to **Fig 4.4-3**)

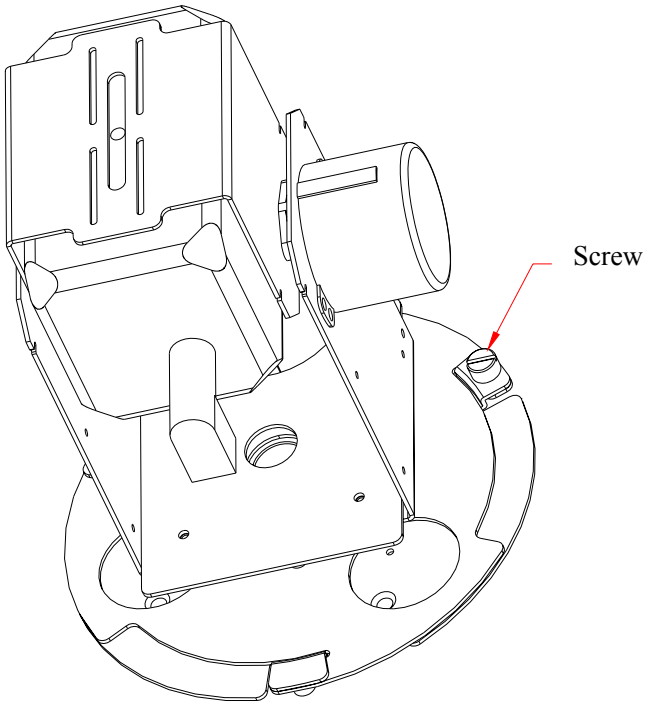
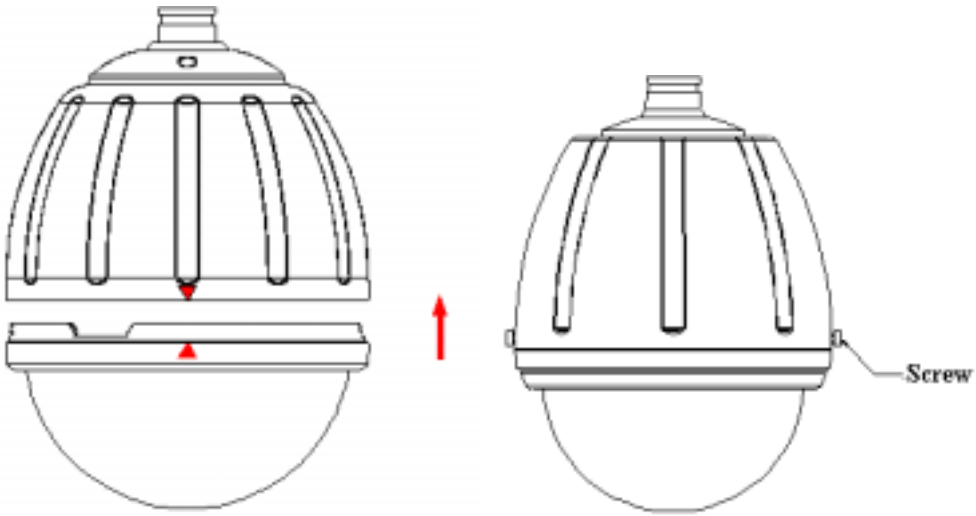


Fig 4.4-3

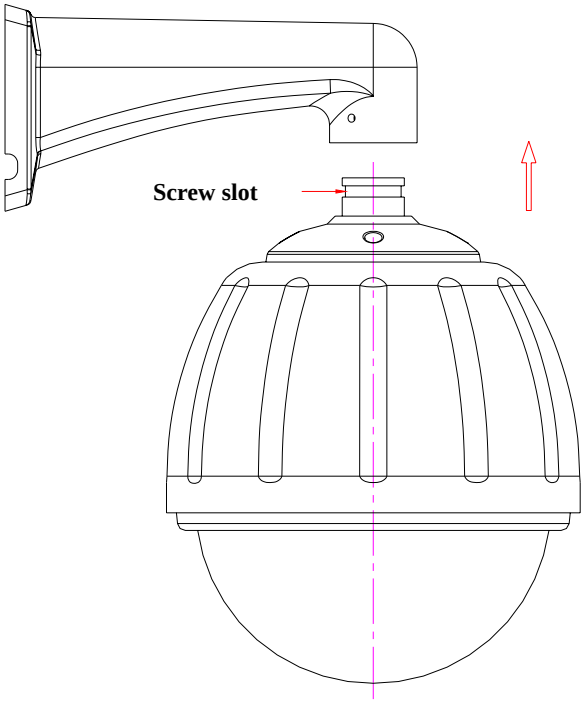
Step 4. Put on the gloves and direct arrow-headed point on the vitreous cover to the right position and tighten the two screws manually or with a screwdriver. (Refer to the below figure)



Put on the gloves and put the vitreous cover in right position, and tighten the two screws manually or with a screwdriver. (See the above figure)

4.5. Install the Housing and the Bracket of Dome Camera

Push the power cable, video cable and controlling cable through the bracket hole, and direct the top of the housing to the bracket hole and tighten them. Use a screwdriver to drive the three M6 screws on the bracket into the slots. (Refer to the below figure)



4.5. Install the Wall Mount Bracket of Constant Speed Dome Camera

Step1. Select the desired location and make sure the place for the dome camera installation can sustain its weight. Pencil the relative positions of the 4 x φ7.5 bores of the wall bracket on the wall, and fix the bracket on the wall with special screws (prepared by the user). (**Refer to Fig 4.5-1**)

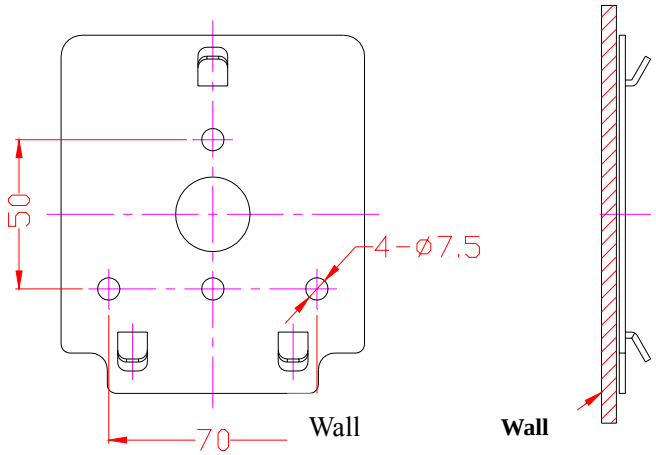


Fig 4.5-1 Dimension of Wall Mount Bracket

Step 2. Put the power device into the connected wall bracket and pin the power device with the power pinning board, then, tighten the screw lest the power device slides out. (**Refer to Fig 4.5-2**)

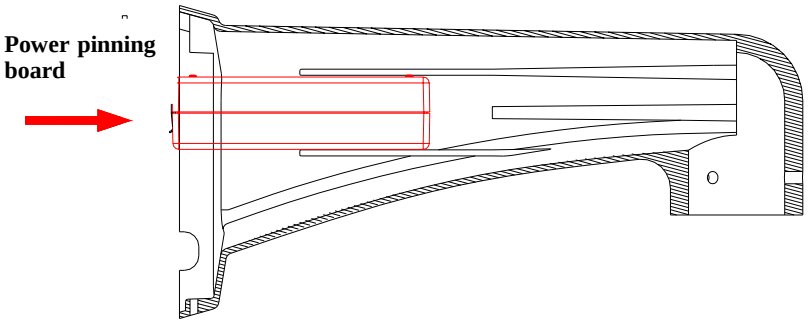


Fig 4.5-2

Step 3. P Pull the power cable, video cable and controlling cable out of the bracket tube, and direct the dotted-line part shown in the figure to the corresponding pegs on the installed peg-board, then push the bracket downward until it locks in place. After this, direct the screw on the bracket to one corresponding bore on the lower part of the peg-board and tighten the screw. (**Refer to Fig 4.5-3**)

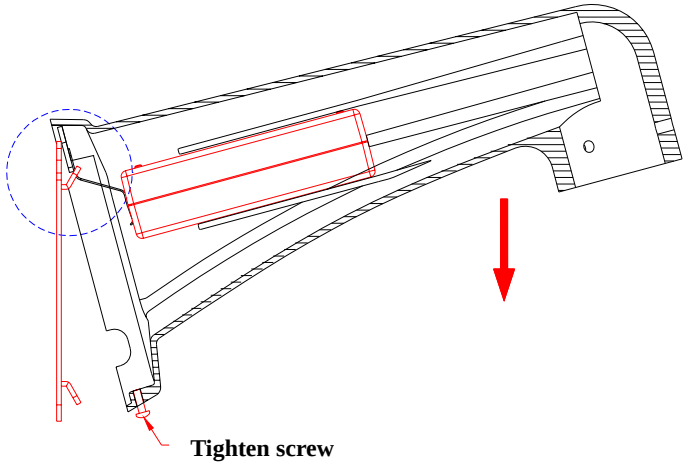


Fig 4.5-3

4.6. Install the Ceiling Mount Bracket of Constant Speed Dome Camera

Select the desired location and make sure the place for the dome camera installation can sustain its weight. Pencil the relative positions of the three bores of the bracket on the ceiling, and fix the bracket to the ceiling with special screws (prepared by the user). Do not forget to push the connecting power, video and controlling cables through the cable outlet into the bracket tube.

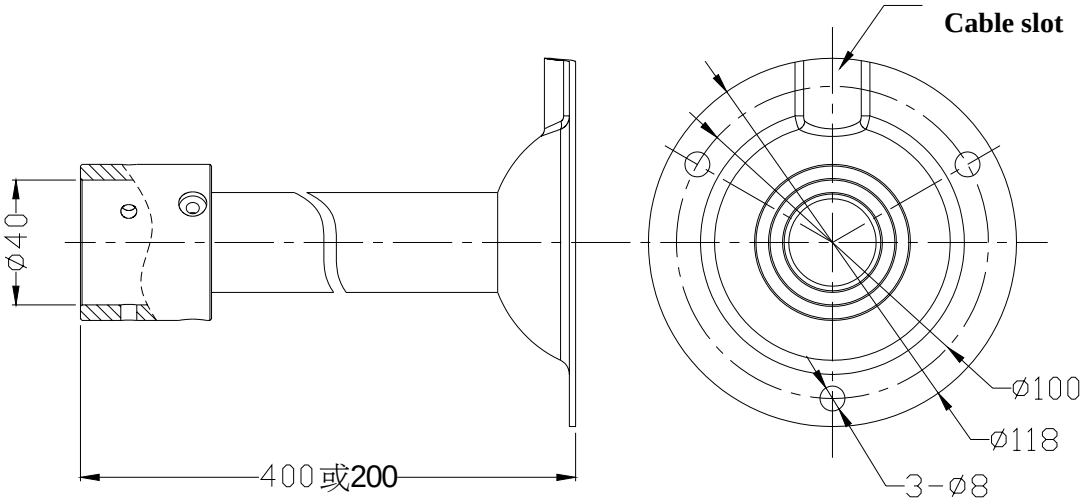


Fig 4.5-4 Dimension of Ceiling Mount Bracket

5. Connecting Power Cable and Signal Cable of the Dome Camera

The connection of cables begins with the completion of installation.

Table 7 Cable connection and function description

Cable	Application	Connecting objects	Remarks
4-strand cable	DC12V	Power adaptor	DC12V(+):Red wire DC12V(-): Black wire
	485 Signal	DVR or Joystick Keyboard	RS-485(+):Green wire RS-485(-): White wire
Video cable	Camera signal	Monitor or DVR	BNC connector
Temperature controller cable	DC12V	Power adapter	Parallel connection with the power supply of Controller board.
Camera lens controlling cable	Camera/power control	Controller Board to camera	Provided with the unit (including power cables)

- **Connection of Power Cable and RS485 Cable**

  Please connect the already existing AC220V power cable to the 200V power connector of the special power device provided by this company, and then connect the 12V output outlet with the power connector of the camera. Directly link the 485 controlling cable with the 485 port of the camera, the red with 485(+) while the black with 485 (-).

- **Connecting Cable of Temperature Controlling Devices**

  If the selected product has temperature controlling device, its power (DC12V) cable and the power supply of the dome camera (also DC12V) should have parallel connection to a special power supply device.

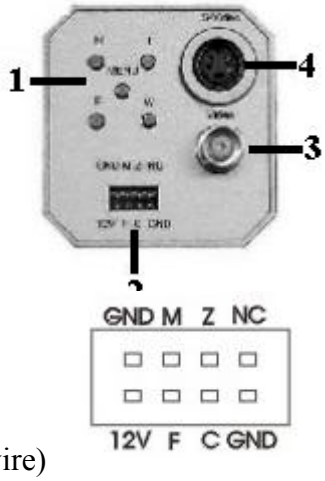
- **Connection of Video Cable**

  Please weld a BNC connector to the already installed video cable, and then make a connection to the video outlet provided by this company.

Now, all the power cables and signal cables have been connected. Please check carefully to guarantee correctness and firmness of all connections.

6. Connecting Power Cable and Signal Cable of the Dome Camera

6.1. The instruction of Camera back panel



1. **Function Key:**
   N: Near focus **F:** Far focus
   W: Decrease focal length Wide lens
   T: Increase focal length
2. **BNC Connector:** Video output
3. **S-Video Connector:** S-video output
4. **Controller Port:** Please refer the Pin assignment as below
   GND: Ground (Black and Blue color wire)
   M: Menu operation (OSD) (Green color wire)
   Z: Zoom (Orange color wire) **NC:** No Used
   12V: DC12V+ (Red color wire) **F:** Focus (Yellow color wire)
   C: Command port (White color wire)

6.2. Operation the OSD function of Camera

Please follow the process to adjust the camera function via OSD as below:

Step 1: Press the " **Menu** " button to Enable/ Disable the OSD function if you use t the I-View's FSKY-100 Keyboard that please select the " **CLOSE** " button to enable/disable the OSD function.

Step 2: Press the " **WIDE** " button to choose the Up /Down function item when you using the I-View's FSKY-100 Keyboard.

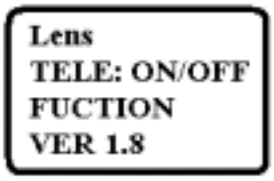
Step 3: Press the " **NERA /FAR** " button to choose the function.

Step 4: Press the " **Menu** " button again to exist OSD setting.

6.2. The OSD function description

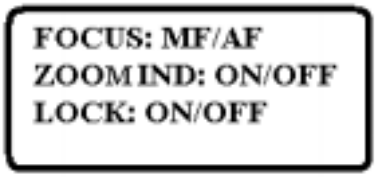
Main Function:

LENS: Select the focus, Zoom and Lock function.
TELE: Enable /Disable Tele function.
FUNCTION:
VER: The firmware version.



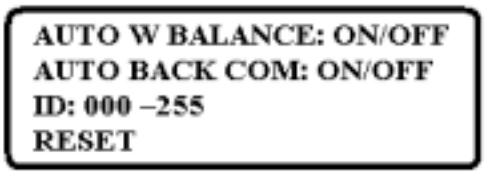
LENS Submenu:

FOCUSE: MF: Manuel focus; **AF:** Auto focus
ZOOMN IND: Enable /Disable Zoom indicator.
LOCK: Enable /Disable the OSD function



FUNCTION Submenu:

AUTO W BANANCE: Enable /Disable auto white balance.
AUTO BACK COM: Enable /Disable auto back light compensation function.



ID: Setup the camera number on the screen. The number is from 000-255.
RESET: Press " **Reset** " item and the setting become to default.

7. Operation the PTWO-220 PTZ Dome camera

7.1. Checking the operation Unit in Operation

Once the power supply begins, check whether the power indicator of on the PCB panel is on. Now the dome camera begins to do the self-check. After the self-check, the position of the dome is horizontally on the left position, tilt 30º. Two states may follow the self-check:

a. The dome camera makes no action

b. The dome camera is in the state of pan auto- touring

If the dome camera is in the state of pan auto-touring, the tour should be stopped through the controlling device to avoid camera--cable friction or inner housing collision arising from improper installation.

After installing the vitreous cover, control the dome camera to make slow pan/tilt movement, and observe its agility and stability, and check whether there is camera-cable friction or inner housing collision.

If the camera movement is unstable and with noise, please checks whether the connection between the dome camera and the bracket is vertical, or whether the camera is in good connection with the peg-board. If not, switch off the power supply, then check and re-install the unit following the above-mentioned installation instructions.

If there is a camera-cable friction or inner housing collision, switch off the power and open the vitreous cover to adjust the position of the camera on the suspender, or tidy up the cables inside the inner housing. Then reinstall the vitreous cover.

Switch on the power again, control the dome camera to make slow pan/tilt movement, observe its agility and stability, and check whether there is camera-cable friction or inner housing collision.

If the process goes smoothly, you can adjust the scope of pan scan, i.e. scope of maximum left/right positions.

7.1. Adjustment and Setup of Dome Left/right Positions

The default movement range of the unit is 365º. The user can setup the dome movement range according to the actual conditions. Left/right positions of the dome can be setup in three ways:

a. Setting the dome's left/right positions through the company's special keyboard

Once the dome is installed and power is on, the dome camera starts a self-check. After the self-check, the position of the dome is the left position, Setup the maximum left/right positions by the special keyboard connected to the dome camera through 485 bus. First, setup the Baud rate, protocol and address of the

keyboard identical with those of the dome camera, and make sure the keyboard can control the movement of the dome camera.

Enter 160 on the keyboard, and press “PREVIEW” key to enter the setup of maximum left/right positions, then turn the joystick on the keyboard to the right direction till the dome reaches the desired point of right position setup, and enter 131, and press “PREVIEW” key again, now the dome’s right position have been setup successfully. Next, turn the joystick on the keyboard to the left direction till the dome reaches the desired point of left position setup, enter 130 and press “PREVIEW” key again, now the dome’s left position have been setup successfully. After the setup, enter 161 and press “PREVIEW” key to exit the setup. Now the setup of left/right positions is completed.

b. Setting up the dome’s left/right positions through the coordinated operation of DVR and the dome camera’s front panel (The operation requires two people)

Once the dome is installed and power is on, the dome camera starts a self-check. After the self-check, the position of the dome is the default left position of the dome camera. Open the vitreous cover, find on the dome camera panel the two keys-”S1”, “S2”, then, at the same time, press the two keys together with your forefinger and middle finger for about 2 seconds till the green indicator—D11 is continuously on . The continuous-on state of the green indicator suggests entering the setup of the dome’s left/right position.

Inform the personnel in the controlling room with an interphone, and the personnel should control through the DVR to move the dome right till it reaches the desired point of right position setup, and then the personnel should inform the person at the terminal that the dome camera is in the desired place. Then the person at the terminal should press key “S2” for about 2 seconds till the same green indicator glistens once. The glistening means the setup of the dome’s right position is successful.

Once again, inform the personnel in the controlling room with an interphone, and the personnel should control through the DVR to move the dome left till it reaches the desired point of left position setup, and then the personnel should inform the person at the terminal that the dome camera is in the desired place. Then the person at the terminal should press key “S1” for about 2 seconds till the same green indicator glistens once. The glistening means the setup of the dome’s left position is successful.

On completing the setup of left/right positions, press the two keys “**S1**” and “**S2**” together with your forefinger and middle finger for about 2 seconds till the green indicator—D11 is off. The off state of the green indicator suggests exit of the dome’s left/right position setup. The exit of the dome’s left/right positions setup can also be realized by switching off the power and, then, on again.

c. Setting up the dome’s left/right positions through keys on the dome camera panel. Once the dome is installed and power is on, the dome camera starts a self-check. After the self-check, the position of the dome is the defaut left position of the dome camera. Open the vitreous cover, find on the dome camera panel the two keys-”S1”, “S2”, then, at the same time, press the two keys

together with your forefinger and middle finger for about 2 seconds till the green indicator—D11 is continuously on . The continuous-on state of the green indicator suggests entering the setup of the dome's left/right position.

Next, press the key "S2" on the dome camera panel and then release it, then the dome begins to turn right. When the dome reaches the desired point of right position setup, press either "S2" or "S1" and then release it, and the dome will stop moving. If the dome goes out of the desired range, press the key "S1" on the dome camera panel and release it, then the dome begins to turn left. When the dome reaches the desired position, press either "S2" or "S1" and then release it, and the dome will stop moving. Finally, press the key "S2" for about 2 seconds till the green indicator—D11 glistens once. The glistening means the setup of the dome's right position is successful.

Then the setup of the left position follows. Press the key "S1" on the dome camera panel and then release it, then the dome begins to turn left. When the dome reaches the desired point of left position setup, press either "S2" or "S1" and then release it, and the dome will stop moving. If the dome goes out of the desired range, press the key "S1" on the dome camera panel and release it, then the dome begins to turn left. When the dome reaches the desired position, press either "S2" or "S1" and then release it, and the dome will stop moving. Finally, press the key "S1" for about 2 seconds till the green indicator—D11 glistens once. The glistening means the setup of the dome's left position is successful.

On completing the setup of left/right positions, press the two keys "**S1**" and "**S2**" together with your forefinger and middle finger for about 2 seconds till the green indicator—D11 is off. The off state of the green indicator suggests exit of the dome's left/right position setup. The exit of the dome's left/right positions setup can also be realized by switching off the power and, then, on again.

If the user intends to change the setup of left/right positions after the setup has been done, please refer to the adjustment and setup instructions.

1. **Pressing two keys together for two seconds indicates entering or exiting the setup of left/right positions**
2. **Press the key "S1" once on the dome camera panel would move the dome left; the second press stops the movement.**
3. **Press the key "S2" once on the dome camera panel would move the dome right; the second press stops the movement.**
4. **Press the key "S1" for 2 seconds confirms the dome's left position.**
5. **Press the key "S2" for 2 seconds confirms the dome's right position.**
6. **The continuous-on state of the green indicator suggests entering of the left/right position setup.**
7. **The off state of the green indicator suggests exit of the left/right position setup.**
8. **The green indicator's glistening once suggests confirming the dome's left/right position setup.**

7.2. The Setup, Entering and Exit of Default Position

The unit has a default position. The user can setup default position for a key monitoring area according to actual conditions. If not operated after 10 minutes, the dome camera will automatically monitor the preset position.

a. Setup of the Default Position

Move the dome camera to a key monitoring area through the controlling keyboard, and enter number "164" from the keyboard and press the "PREVIEW" key, and the setup is successful.

b. Entering and Exit the Default Position

The user can enter or exit the function of default position through the keyboard. Enter number "162"and press the "PREVIEW" key, and the function is activated. Enter number "163"and press the "PREVIEW" key, and exit the function.

7.3 Trouble Shooting

Problems	Possible causes	Reminder
No action, no picture or no indicator on when power is switched on.	Wrong connection of power cables	Correct
	Power supply fault	Replace
	Not required power type	Replace
	Bad power cable connection	Correct
Normal self-check and image but out of control	Address or Baud rate setup wrong	Setup again
	Protocol setup wrong	Setup again
	RS485 bus bad connection	Check RS485 bus connection
Abnormal self-check image with motor noise	Mechanical failure	Repair
	Camera inclined	Reinstall
	Power supply not enough	Replace, nearby power supply recommended
Unstable image	Bad connection of video	Correct
	Power supply not enough	Replace
Some dome camera out of control or control delayed	Power supply not enough	Replace, nearby power supply recommended
	Whether matching resistor is in the dome camera at the farthest end	Install matching resistor in the dome camera
	Weak 485 signal; not enough power in 485 transformer	Replace transformer