

WARNINGS AND CAUTIONS

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH VENTILATION GRILLS OR OPENINGS ON THE EQUIPMENT.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user the presence of non-insulated “dangerous voltage” within the product’s enclosure that maybe of sufficient magnitude to constitute a risk of electric shock to different persons.



The exclamation point within an equilateral triangle, is intended to alert the user the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product

PRECAUTIONS:

1. Persons without technical qualifications should not attempt to operate this dome device before reading this manual thoroughly.
2. Remove any power to the dome before attempting any operations or adjustments inside the dome cover to avoid potential damage to the mechanism.
3. Inside the dome cover there are precision optical and electrical devices. Heavy pressure, shock and other sudden adjustments or operations should be avoided. Otherwise, you may cause irreparable damage to the product.
4. Please DO NOT remove or disassemble any internal parts of the video camera to avoid normal operation and possibly void the warranty. There are no serviceable parts inside the camera.
5. All electrical connections to the dome should be made in strict accordance with the attached labels and wiring instructions in this manual. Failure to do so may damage the dome beyond repair and void the warranty.
6. For outdoor installation especially in high places or poles, it is highly recommended that the proper lightning arrestors and surge suppressors are installed before the dome is entered into service.
7. Please do not use the product under circumstances where the limits exceed the maximum specified temperature, humidity or power supply specifications.

IMPORTANT SAFEGUARDS

1. Read these instructions before attempting installation or operation of dome device
2. Keep these instructions for future reference
3. Heed all warnings and adhere to electrical specifications Follow all instructions
4. Clean only with non abrasive dry cotton cloth, lint free and approved acrylic cleaners
5. Should the lens of the camera become dirty, use special lens cleaning cloth and solution to properly clean it.
6. Do not block any ventilation openings. Install in accordance with manufacturer's instructions
7. Use only attachments or accessories specified by the manufacturer
8. Verify that the surface you are planning to use for attaching the dome can adequately support the weight of the device and mounting hardware
9. Protect this devices against lighting storms with proper power supplies
10. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, when liquid traces are present, or the presence of loose objects is evident or if the device does not function properly, or has received sever impact or has been dropped accidentally.
11. Indoor dome is for indoor use only and not suitable for outdoor or high humidity locations. Do not use this product under circumstances exceeding specified temperature and humidity ratings.
12. Avoid pointing the camera directly to the sun or other extremely bright objects for prolonged period of time avoiding the risk of permanent damages to the imaging sensor.
13. The attached instructions are for use by qualified personnel only. To reduce the risks of electric shock do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.
14. During usage, user should abide by all electrical safety standards and adhere to electrical specifications for the operation of the dome. The control cable for RS485 communications as well as the video signal cables should be isolated from high voltage equipment and or high voltage cables.
15. Use supplied power supply transformer only.

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- * Indicates the functions with default protocol, it might not function by using other protocols
 - ※ Indicates the optional functions, only with certain mode

1 Product Introduction

1.1 Package Contents

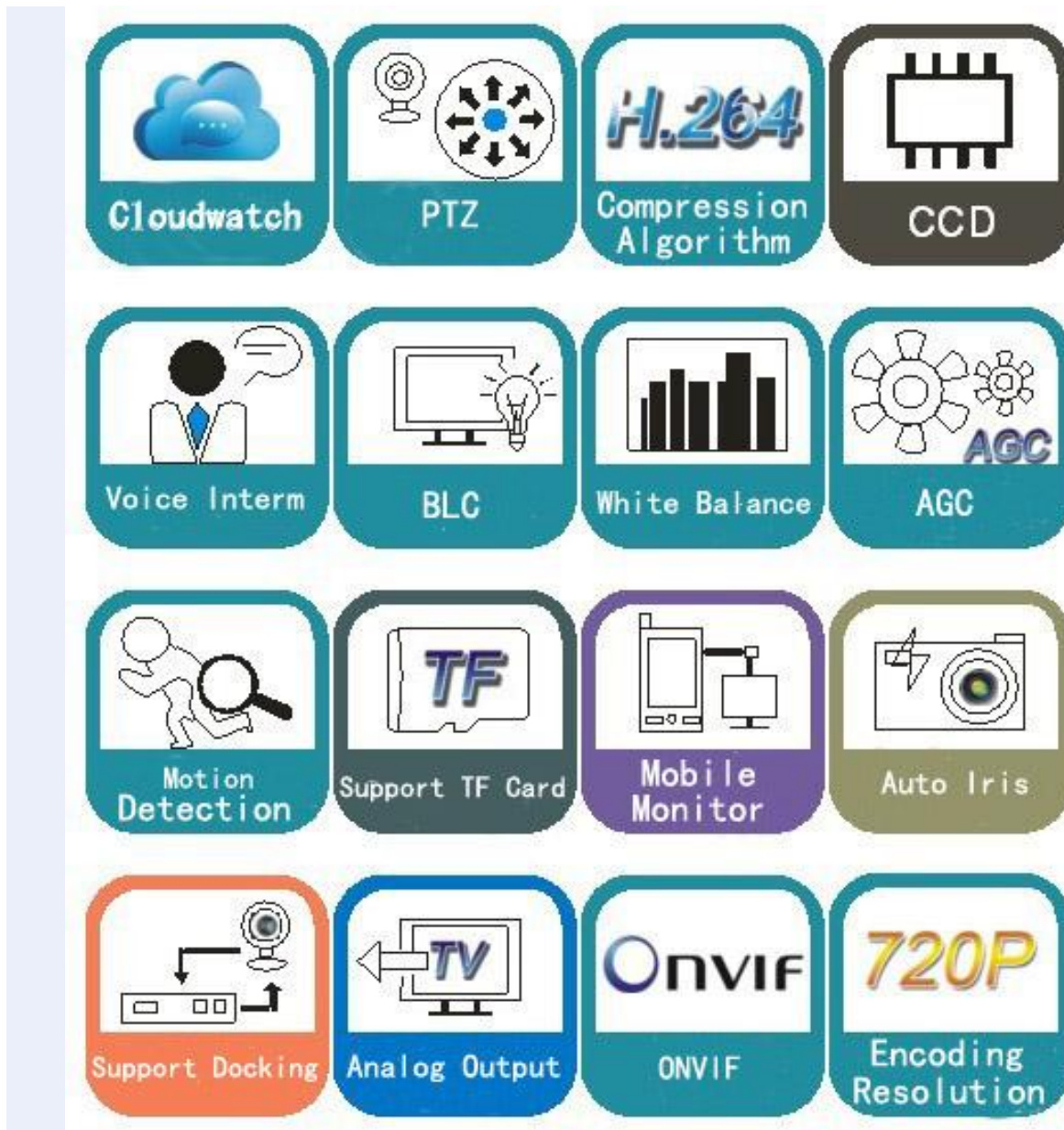
IR Speed dome	1pc
Wall mount bracket	1pc
Power supply	1pc
Screws kits	1pc
User manual	1pc

1.2 Specification

Image Sensor	1/3" CMOS
Preview video resolution	1920×1080 1280×720
Mini Lumination	0.05Lux/F1.6(Color),0Lux(IR on)
Signal Noise Ratio	>50dB
Focus	Auto/Manul
D/N	IR-Cut
Optical Zoom	18*Zoom F=4.70mm~84.6mm
F-Stop	F1.6(color),F2.8(IR on),Auto
Close-up	INF(Color),1000mm(Far)
Horizontal Rotation Range & Speed	Range:360° ,Speed:0.3~300°/s
Tilt Rotation Range & Speed	Range:90° ,Speed:0.5~50°/s
Go to Preset Speed	Horizontal:300°/s,Tilt:50°/s
Guard Tours	4 groups, Max.64 points/Group
Presets	256
Power off Memory	Support
Video output	RJ45 10/100M Ethernet
Mini Delay Time	0.18s
Frame rate	60Hz:30fps(1920×1080/432×240) 60Hz:30fps(1280×720/432×240)
Compressed Image Format	MPEG-4/H.264
Communication Protocol	TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP

Compressed Image Rate	500Kbps~7Mbps
3 D Keyboard	Pelco-P/Pelco-D supported
Power	DC 12V-4A/AC 24V-3A
Back End Record Mode	PDVR,PC,Megapixel HD system card,NVR,IP-SAN
Power Consumption	≤ 20W
Operating Temperature	-30°~ +70°
Operating Humidity	10~85% Non Condensing
Weight	5~7kg
WIFI/3G	Support
Protection	IP66,Transient voltage 6000V

1.3 Performance Features



- ✧ Use high performance 1/3" CMOS, and can perform perfectly in lower light environment.
- ✧ Support high definition resolution 1920×1080P.
- ✧ 18 × optical zoom and be able to do remote surveillance .
- ✧ Use Germany IR lights and can reach 120m.
- ✧ Dual-stream output is supported and just need small storage space.
- ✧ Support ONVIF protocol, convenient to connect to third party.

1.4 Function Description

Alarm Linkage

Intelligent dome camera supports 4 switch alarm inputs, 1 switch output and 1 digital output. When the dome camera has detected the alarm closed signal, it will run the preset action which can be one of the calling preset points or no action.

Auto-adaptive to Protocol and Module

The dome can auto-adaptive to the multi protocol and most of the module without changing the DIP switch.

3D Allocation

With this function users can move the image of some area to the center of screen according to specified level and vertical coordinates and auto control to zoom according to zoom parameter set. Screen coordinate location and zoom local can be available via the software support.

Privacy Masking

In the monitoring scope, areas that users can't or aren't willing to make show in the screen of the monitor can be set as privacy protected area (area masking), such as area where customers enter the password in monitoring system of bank or some doorway.

Trace Memory (Pattern Scan)

The traces of camera's any running action in every directions of PTZ can be saved, which is called pattern scan. In pattern scan the camera turning to up, down, left and right and zooming in or out can be saved. This function remembers and imitates a process of operator's operation.

This dome camera has 4 path patterns. Each path can record 512 different instructions or the longest 15mins' path operation. Opening any one of the paths can remember automatically the present running trace and scan cyclically according to the recorded trace.

Zero Alignment

There is a point specified as zero point. When the dome is working, the preset point is not accurate caused by the operator. User can make the dome automatically enable the zero alignment by operational order.

Auto Flip

In the manual scanning mode, when beyond the maximum angle in tilt and if the joystick is held continuing in tilt direction, the dome will automatically rotate 180 degree in horizontal direction to maintain continuity of scanning. So vertical 180° continuous monitoring comes true.

Focus

The auto focus enables the camera to focus automatically to maintain clear image. User can use manual focus to get expected image in special condition.

Under the following conditions camera will not auto focus on the camera target:

- (1) Target is not in the center of the screen;
- (2) Attempting to view images that are far and near at the same time;
- (3) Target is strongly lighted object, such as neon lamp, etc.;

- (4) Targets are behind the glass covered with water droplets or dust;
- (5) Targets are moving quickly;
- (6) Monotonous large area targets, such as wall;
- (7) Targets are too dark or faint.

BLC(Back Light Compensation)

If the light of background is bright, the target in the picture may appear dark or as a shadow. BLC enhances exposure of the target in the center of the picture. The dome adjusts the iris according to the center of the pictures. If there is a bright light source outside this area, it will wash out to white. The camera will adjust the iris so that the target in the sensitive area will be properly exposed.

Iris Control

Factory default is automatic camera aperture, in mode of which camera senses changes in ambient light through moving and adjust automatically lens aperture to make the brightness of output image stable.

Ratio Speed

Intelligent pan and tilt speed is variable depend on the zoom factor. When zooming in, the speed will become slower and when zooming out, the speed will become faster.

360 Scan

Dome 360°clockwise continuously scans the display scene at set speed in horizontal direction under the condition that pitch angle remains the same. In the scanning status, operator can move the joystick to exit from scanning.

Preset

After the dome camera keeps arbitrary PTZ location, it will automatically move to the defined position when preset is called.

Guard Tour Scan

Dome patrol scans according to certain edited preset order.

Limited Points Scan (A-B Scan)

The dome operates reciprocating scanning the real scenarios at a certain speed between the set left and right points. The range of left and right points boundary is 20° - 340°.

Power Off Memory

This feature allows the dome to resume its previous preset or status after power is restored. By default setting, the dome support power up memory, which improves the reliability and avoids repeated settings of the parameter.

Park Action

If users don't operate the dome in set time, it will automatically run preset specific mode (pan scan, A-B scan, park action, cruise, preserve action etc.).

Multilanguage OSD Menu

The available language on screen menu can be English, German, Italian, French or Spanish.

User can set the function or parameter, or check the related information through the OSD.

Return to PTZ Function

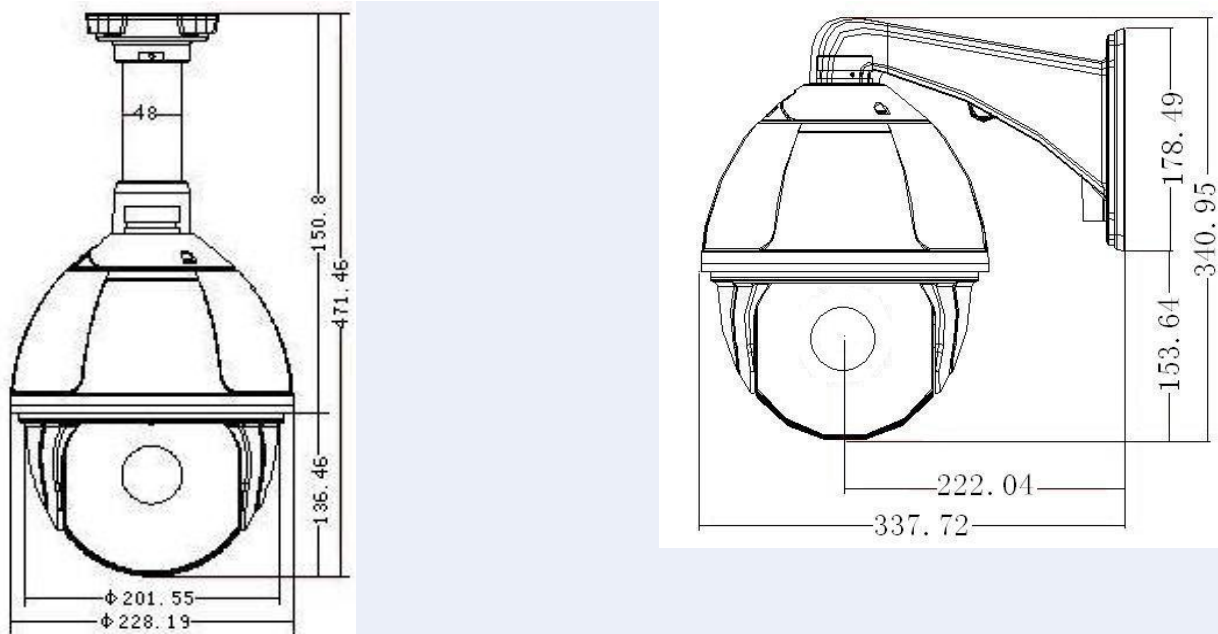
Return dome's pan and tilt and camera zoom value to the control device.

Temperature Inspection Function

It can inspect the inner temperature of dome while dome runs, and be able to manage the temperature well.

2 Installation

2.1 Dimension



Ceiling Installation

Bracket Installation

2.2 Installation

2.2.1 Wall Mounted

Installation conditions:

Wall mounted dome can be used in the hard wall structure whose thickness should be enough

to install expansion bolt in indoor and outdoor environment. The wall can bear at least 4 times the weight of the dome. Install wall hanging bracket:

a. As shown in fig 2.3, with the installation holes in the underside of the wall hanging bracket as pattern, draw punched locations and punch.

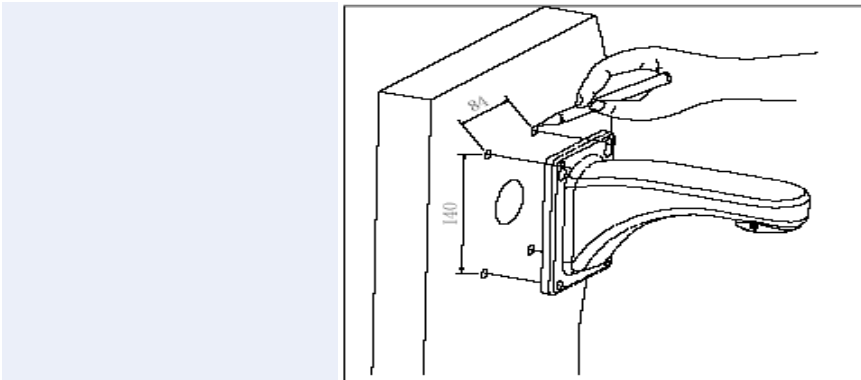


Fig 2.3

b. As shown in fig 2.4, fix the wall hanging bracket on the wall with wire and cable through it.

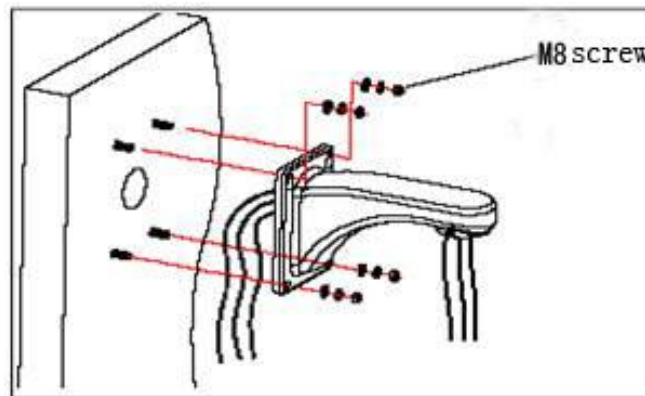


Fig 2.4

2.2.2 Corner Mounted

Installation conditions:

Corner mounted dome can be used in the hard wall structure with an angle of 90° whose thickness should be enough to install expansion bolt in indoor and outdoor environment. The wall can bear at least 4 times the weight of the dome. Install corner mounted attachment and wall hanging bracket:

a. As shown in fig 2.5, with the installation holes in the corner mounted attachment as pattern, draw punched locations on the wall with an angle of 90° and punch to install expansion bolt.

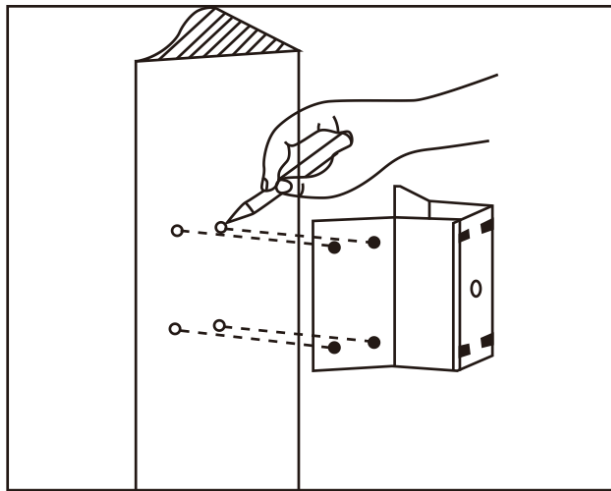


Fig 2.5

b. As shown in fig 2.6, use M8 screw nut to fix the base of corner mounted on the wall with all cables through the center holes of the corner mounted, marine glue and bracket. Enough wiring length should be left.

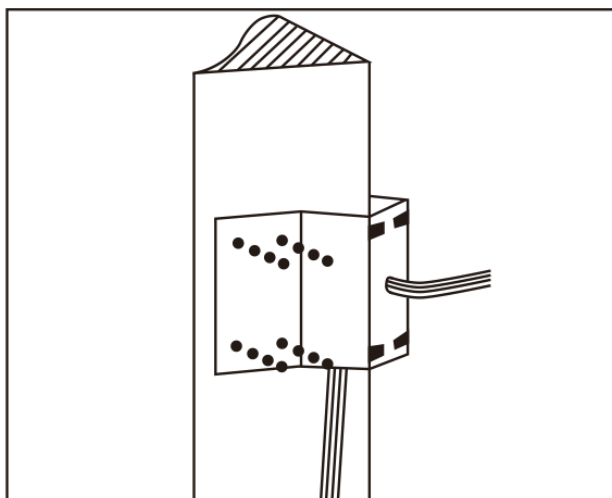


Fig 2.6

c. As shown in fig 2.7, fix the wall hanging bracket with all cables power through it on the corner mounted attachment.

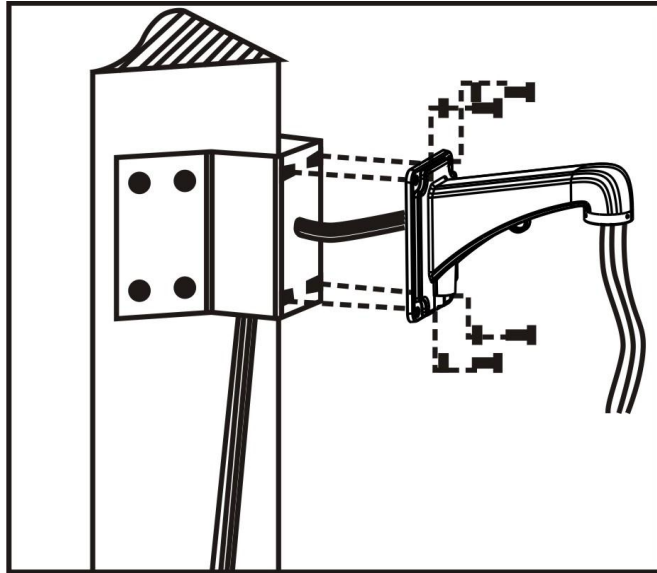


Fig 2.7

2.3.3 Pole Mounted

Installation conditions:

Pole mounted dome can be used in the hard pole structure in indoor and outdoor environment whose diameter should match the installation size of stainless hose clamps. Factory default is 6 inches stainless hose clamps (fit ϕ 130-152mm pillar). The pole structure can bear at least 4 times the weight of the dome. Install corner mounted attachment and wall hanging bracket:

a. As shown in fig 2.8, use the stainless hose clamps to fix the pole mounted attachment with all cable through it on the pole structure.

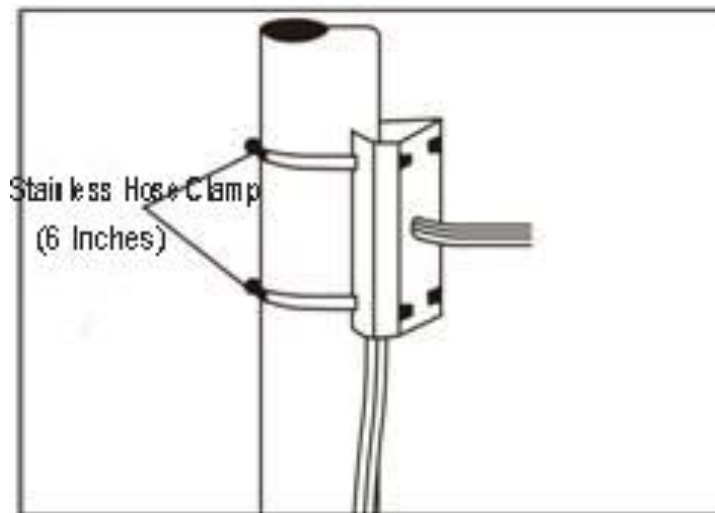


Fig 2.8

b. As shown in fig 2.9, fix the wall hanging bracket with all cables through it on the pole mounted attachment.

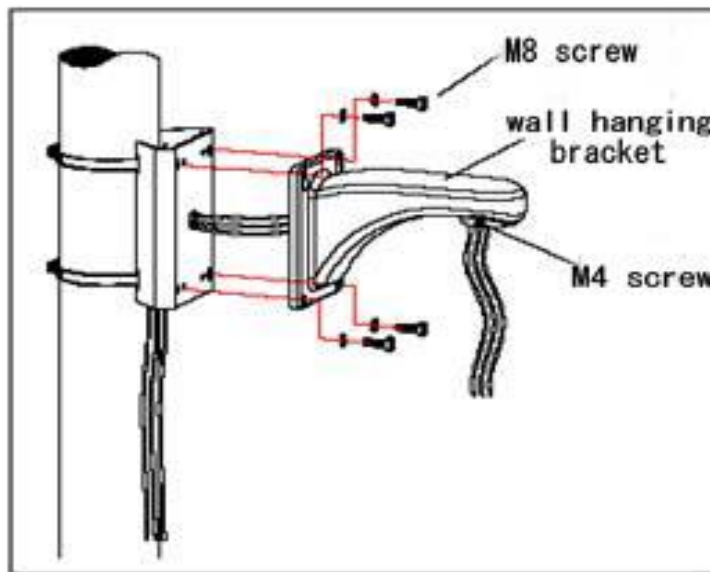


Fig 2.9

2.3.4 Ceiling Mounted

Installation conditions:

Ceiling mounted dome with thick pole can be used in the hard ceiling structure whose thickness should be enough to install expansion bolt in indoor and outdoor environment. The ceiling can bear at least 4 times the weight of the dome. Install the base of ceiling and boom:

a. As shown in fig 2.10, with the installation holes in the base of ceiling as pattern, draw punched locations in the ceiling and punch to install M6 expansion bolt.

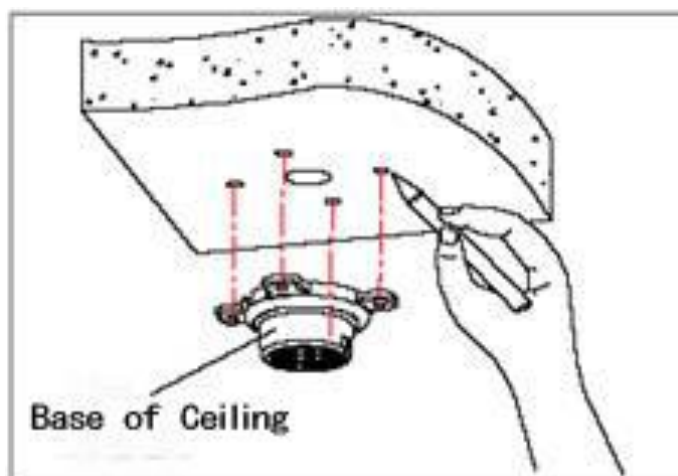


Fig 2.10

b. As shown in fig 2.11, at first unscrew the M4 screw at the side of the base of ceiling and split the base of ceiling and boom. Then make the three groups of cables of power, video/control and alarming into the side recessing seal groove of the ceiling connector bottom and through the core hole of the base of ceiling mounted. Fix the base of hang ceiling on the ceiling board.

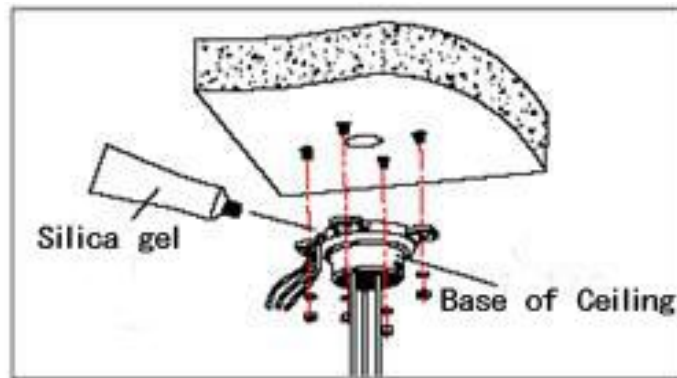


Fig 2.11

Note: If the dome is used in the outdoor conditions, use the silica gel on the faying surface of the base of hang ceiling and the ceiling board and around the out-holes to be sure water proof

c. As shown in the fig 2.12, tighten the boom with electrical wire and cable through it on the base of ceiling and screw up the M4 screw.

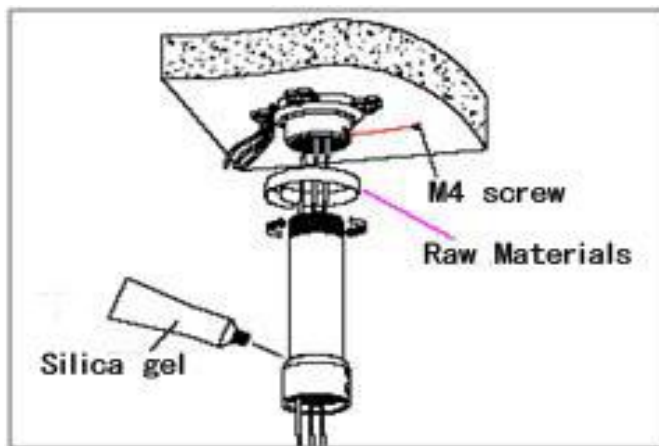


Fig 2.12

Note: If the dome is used in the outdoor conditions, after using enough raw materials to wrap the thread at the upper end of boom, tighten the boom on the base of ceiling. Use the silica gel around the joint sleeve and connector of the boom to be sure water proof

2.4 Connection

Connection of RS485

Before connecting, please turn off the power and read carefully the instructions of all connected devices.

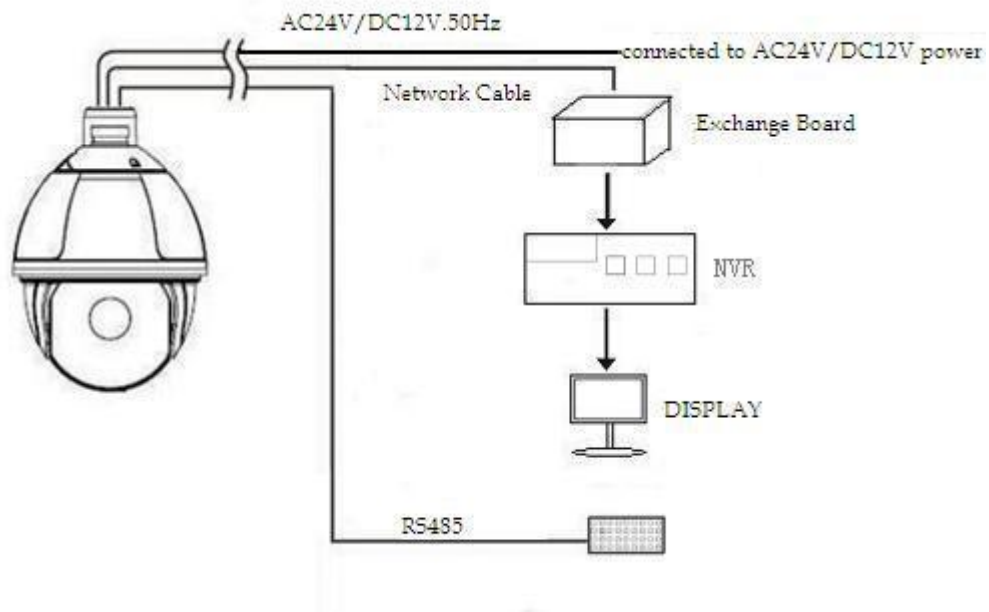


Fig 2.13

3. Function Instruction

3.1 Basic Function

✧ Dome Running

Control joystick or up, down, left and right key in the keyboard.

✧ Zoom

Press ZOOM- button to make the lens farther and minify the scene.

Press ZOOM+ button to make the lens closer and magnify the scene.

✧ Focus

After FOCUS- button is pressed, the object in vicinity will become clearer while the object far away will become ambiguous.

After FOCUS+ button is pressed, the object far away will become clearer while the object in vicinity will be ambiguous.

✧ Iris

Press IRIS- to gradually shrink the iris and decrease the image brightness.

Press IRIS+ to enlarge the iris and increase the image brightness.

✧ Preset Point

Setting preset press button “preset”+”number”+”Enter”.

Calling preset press button “call”+”number”+”Enter”.

Deleting preset press button “clear”+”number”+”Enter”.

Remark: Some preset points are used tentatively for special functions.

3.2 Special Function

The follow presets are predefined as special function, please shot+ preset No+ enter to enable those functions:


PREST	FUNCTION	PRESET	FUNCTION
16	Menu Twice Open	84	Turn on far light
34	Reset	85	Turn on near light
35	Run Wiper	91(31)	Call limit scan
36	Stop Wiper	92(32)	Left limit
75	Group 1	93(33)	Right limit
76	Group 2	94	OSD off
77	Group 3	95 (16+16)	OSD on
78	Group 4	96	Guard tour 3
81(41)	Auto Day/Night	97	Guard tour 2
82(42)	Night	98(38)	Guard tour 1
83	Day	99	Pan scan

Remark: If use some other equipments to control IR dome, some special functions probably can't be effective because of the limit of protocol.

3.3 Screen Character Operation

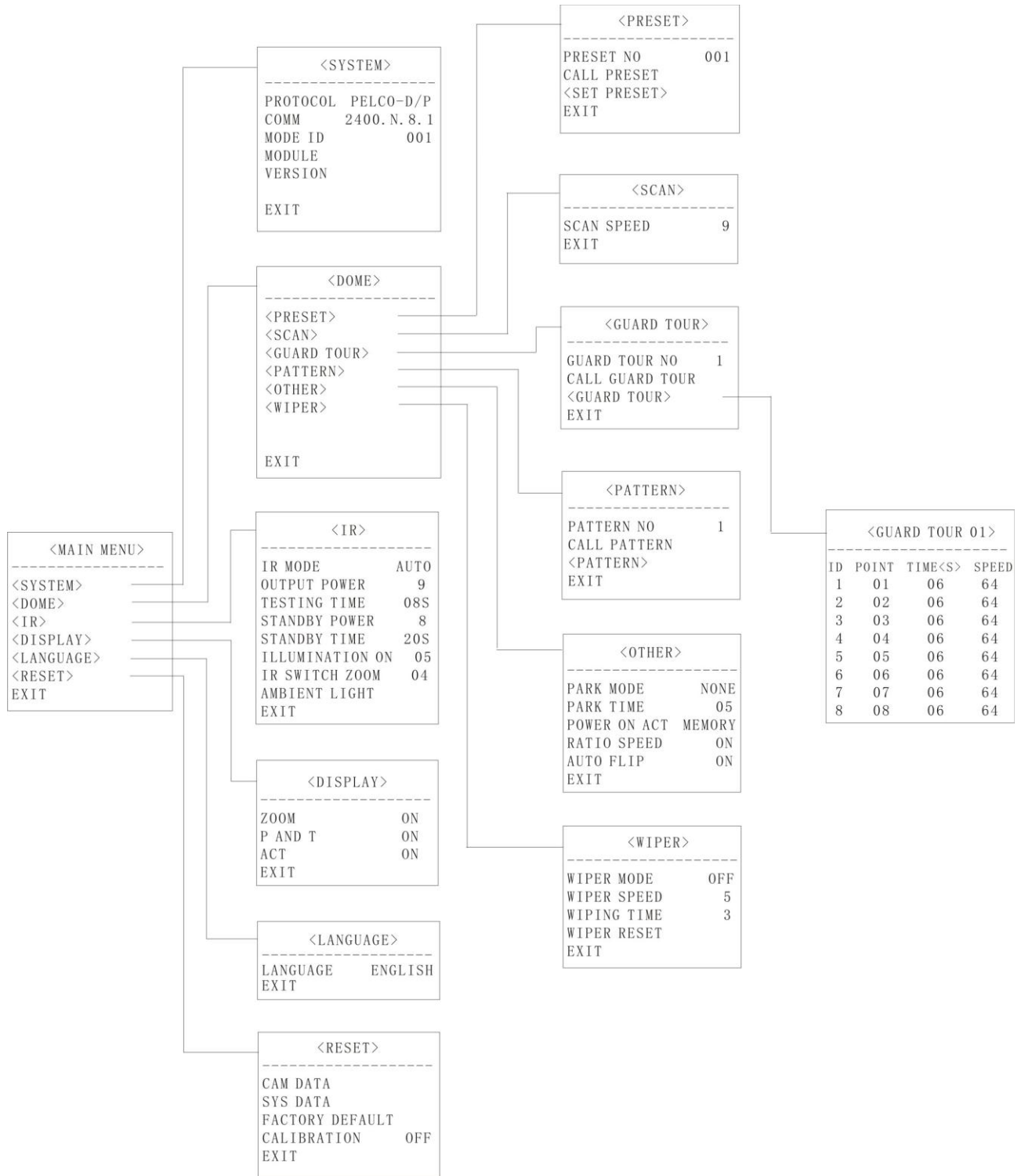
Call preset 95 to enter the OSD, call preset 94 to exit the OSD.

- ✧ Up or Down: Move the option of the OSD, change the value on the OSD.
- ✧ Right: Enter the option, select the item or confirm.
- ✧ Left: Return to main menu or cancel
- ✧ Angle Display: XXX.XX(pan)/XXX.XX(tilt)
- ✧ IR Display: Display on the lower right corner of the screen.

Remark: 1. “” means the cursor selecting some option.

2. ”  “ means editing the content of some option selected.

4 OSD Menu



4.1 Menu Index

<MAIN MENU>	
<SYSTEM>	
<DOME>	
<IR>	
<DISPLAY>	
<LANGUAGE>	
<RESET>	
EXIT	

Fig 4.1.1 Get into the Menu Screen

<SYSTEM>	
PROTOCOL	PELCO-D/P
COMM	2400.N.8.1
DOME ID	001
MODULE	
VERSION	
EXIT	

Fig 4.1.2

- ✧ PROTOCOL: Display the protocol of the dome(Fig 4.1.1)
- ✧ COMM: Baud rate. Check bit. Data bit. Start bit(Fig4.1.2)
- ✧ DOME ID: Display the dome address
- ✧ MODULE: Display the brand and model of camera
- ✧ VERSION: Version will update along with the product upgrading

Remark: Protocol, ID and COMM all can be set in menu <COMM>.

4.2 Dome

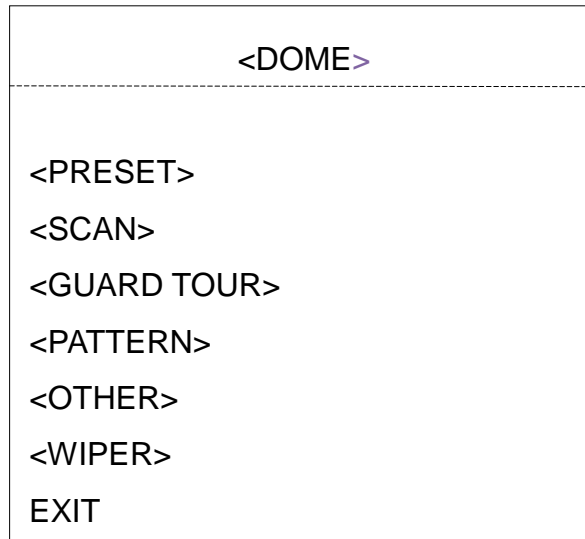


Fig 4.2.1

4.2.1 Preset

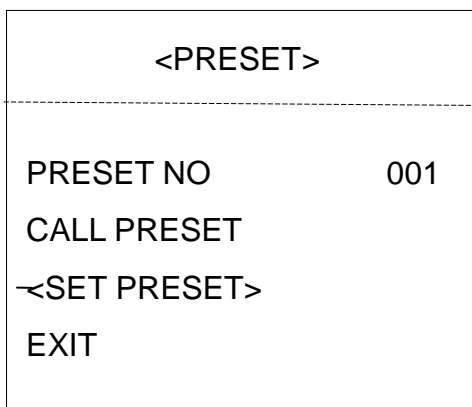


Fig 4.2.2

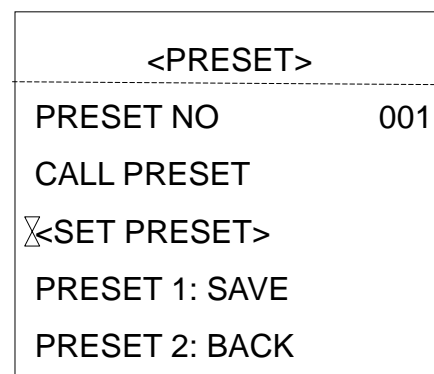


Fig 4.2.3

- ✧ PRESET NO: Select the preset number needing to be operated, whose range is 001-220.
- ✧ CALL PRESET: Call the preset number edited.
- ✧ Entering SET PRESET displays the content as left figure. Call preset 1 to save and call preset 2 to back.

Remark: Because some presets are used to realize special functions, they can not be set and called normally.

4.2.2 Scan

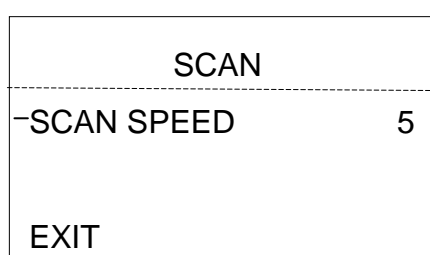


Fig 4.2.4

- ✧ SCAN SPEED: Scan speed includes setting the speed of limited points scan (A-B scan) and 360°scan. Its range is 1-9 grades.

Remark: The effective range of left and right boundary is 20-340°.

4.2.3 Guard tour

<GUARD TOUR>	
GUARD TOUR NO	1
CALL GUARD TOUR	
-<GUARD TOUR >	
EXIT	

Fig 4.2.5

This dome camera can set 4 groups of guard tour. Each group has 16 points and each point can be set along the dwell time and tour speed.

- ✧ GUARD TOUR NO: It has 1-4 groups settable.
- ✧ CALL GUARD TOUR: Call the guard tour ID edited successfully.

<GUARD TOUR>			
ID	POINT	TIME	SPEED
01	01	05	64
02	02	05	64
03	03	05	64
04	04	05	64
05	05	05	64
06	06	05	64
07	07	05	64
08	08	05	64
- <NEXT PAGE>			

<GUARD TOUR>			
ID	POINT	TIME	SPEED
09	09	05	64
10	10	05	64
11	11	05	64
12	12	05	64
13	13	05	64
14	14	05	64
15	15	05	64
16	16	05	64
- SAVE			

Fig 4.2.6

Fig 4.2.7

- ✧ ID: The tour sequence of guard tour group. Its range is 1-16.
- ✧ POINT: The preset of guard tour. Its range is 01-64 settable.

- ✧ TIME: The default time of all points is 05s. Its range is 05-60s.
- ✧ SPEED: The speed between two points in each guard tour group can be set alone. Its range is 1-64 grades.

Note: Preset 33 and 34 can't be set as guard tour point.

4.2.4 Pattern

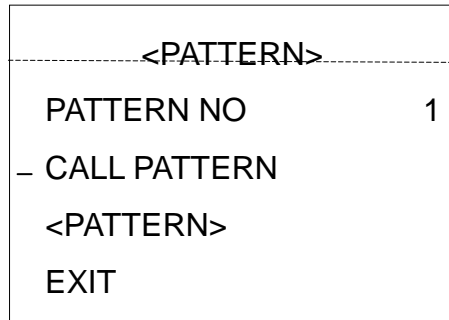


Fig 4.2.8

- ✧ PATTERN NO: Factory default is 1. Select the pattern needing to be edited. 1-4 pattern are effective.
- ✧ CALL PATTERN: Call the patterns having been edited.

PATTERN: Call the patterns having

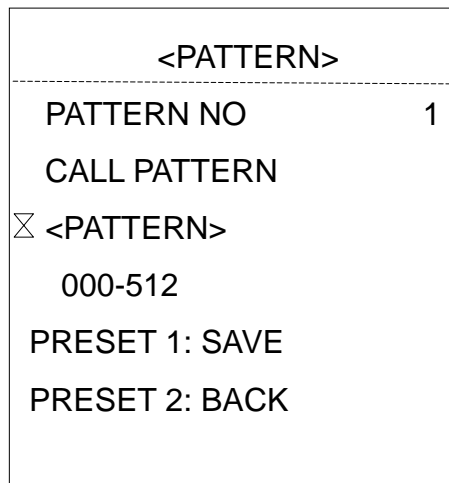


Fig 4.2.9

<PATTERN>

Fig 4.2.9 shows the status when entering to the pattern set.

- ✧ 000-512 means the quantity of operator's running pattern, and 512 is the most amount of the instruction.

Remark: The precision of pattern is associated with the system settings and the module of camera. When using the pattern, the user is recommended to turn off the privacy zone and unnecessary display function.

4.2.5

<DOME>	
<PRESET>	
<SCAN>	
<GUARD TOUR>	
<PATTERN>	
<PRIVACY ZONE>	
<OTHER>	
EXIT	

Other

<OTHER>	
PARK MODE	NONE
PARK TIME	05
POWER ON ACT	MEMORY
RATIO SPEED	ON
AUTO FLIP	ON

Fig 4.3.0

Fig 4.3.1

- ✧ PARK MODE: There are 13 actions of NONE, Pattern 1, Tour 1, 360 scan, AB scan, Preset 1-8 selectable.
- ✧ PARK TIME: The dome camera runs home position after a period of idle time which is home time and whose range is 1-60 mins.
- ✧ POWER ON ACT: There are 14 actions of Memory, Pattern 1, Tour 1, 360 scan, AB scan, Preset 1-8, NONE selectable.
- ✧ RATIO SPEED: Ratio speed can be set as ON or OFF status.
- ✧ AUTO FLIP: The dome camera operated flips horizontally 180° when beyond the maximum angle. If continuing withholding the joystick when beyond the maximum angle in tilt, it flips horizontally 180° and 0° in tilt. So vertical 180° whole continuous monitoring comes true.

4.2.6 Wiper

<WIPER>	
WIPER MODE	OFF
WIPER SPEED	5
WIPING TIMES	3
RESET	
EXIT	

Fig 4.3.2

- ✧ WIPER MODE:It has ON or OFF can be selected.
- ✧ WIPER SPEED :There are 1-5 level can be selected.
- ✧ WIPING TIMES:1-5 times can be selected.
- ✧ RESET:It will initialize the wiper.

Noted:Wiper function only is used to the camera with wiper,not apply to all.

4.3 IR

<IR >	
IR MODE	AUTO
OUTPUT POWER	9
TESTING TIME	08S
STANDBY POWER	8
STANDBY TIME	20S
ILLUMINATION ON	0 5
IR SWITCH ZOOM	04
AMBIENT LIGHT	
EXIT	

Fig 4.3.3

- ✧ IR MODE:It has auto,small light on,large light on,manual and off selectable.
- ✧ OUTPUT POWER:It has selectable range 1-9 level.
- ✧ TESTING TIME:On IR auto working mode and the programmed time, the IR will execute the programmed action, eg. Switch from day to night or from night to day. The detection time is from 2s to 15s selectable.
- ✧ STANDBY POWER:IR standby power can be set to 1-9 level when the dome camera is in idle time,which can improve the life of IR lamps.
- ✧ STANDBY TIME:It is the interval time from no any operation to the dome camera do effective operation.
- ✧ ILLUMINATION ON:It has 1 to 25 grade selectable. On the auto IR working mode, if the illumination on level is less than the ambient light, the picture will change to color, the IR illumination will turn off automatically. If the illumination on level is more than the ambient light, the picture will change to black , the IR illumination will turn on automatically.

- ✧ IR SWITCH ZOOM:When zoom value reaches the demanded setting,the IR LEDs will auto switch from near illumination to far illumination.Zoom value options depend on the mode.Default setting is 04.
- ✧ AMBIENT LIGHT:Ambient light is a system data. User can not change it manually. It changes according to the environment all the time. The data will refresh every time when user enter the OSD. It is from 0 to 50 grade.

4.4 Display

<DISPLAY>	
ZOOM	ON
P AND T	ON
ACT	ON
EXIT	

Fig. 4.4.1

- ✧ ZOOM:Zoom can be selected as ON or OFF.
- ✧ P AND T:On screen, it displays the pan and tilt degree, user can enable or disable it.
- ✧ ACT:It displays the current action, such as set preset,360 scan. ON or OFF can be selected .

4.5 Language

<LANGUAGE>	
LANGUAGE	ENGLISH
EXIT	

Fig. 4.5.1

- ✧ LANGUAGE:Language can be set as English,Spanish,Italian,German or French. Default settings is English.

4.6 Reset

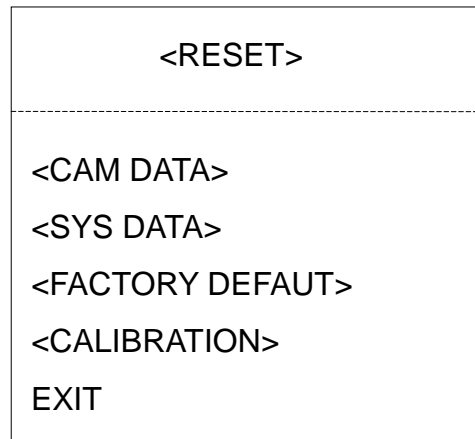


Fig 4.6.1

- ✧ CAM DATA:CAM data is used to initialize the camera and apply to the situation of camera displaying incorrectly.
- ✧ SYS DATA:It is used to initialize the system Settings,including the camera settings,but it will not delete all the information in memory.
- ✧ FACTORY DEFAULT:Factory default is used to initialize the settings of system and camera.After it performs,all the information in memory will be deleted, such as presets, pattern,etc.Please use carefully.And this operation will take much time.Please wait patiently.
- ✧ CALIBRATION:Execute this function to make the motor of the dome to reset in a fixed time to prevent locate inaccurately caused by external operation.Default reset time is 15D.01 to 60 and OFF are selectable.

Appendix I Anti-lightning, Anti-surge

This product is extremely air discharge and lightning protection with TVS tube technology, which can effectively prevent the transient lightning below voltage 3000V, surge and damages caused by other types of pulse signals.

However, necessary protective measures should be made in the premise of ensuring electrical safety for outdoor installation according to the actual situation :

- Signal transmission line must be at least 50 meters far away from the high-voltage equipment or high voltage cable.
- Try to choose outdoor wiring laid down along the roof line.
- Way of sealed steel pipe buried wiring is used in the area which opened, and steel pipe units grounded in one point. Overhead wiring is absolutely prohibited.
- In the strong thunderstorms area or areas with high induced voltage (such as high voltage substations), measure of installation of additional high power lightning protection equipment and lightning rod must be taken.
- Lightning protection and grounding of outdoor devices and lines must take the lightning-protection requirements of buildings into consideration, and comply with the related national standards and industry standards.
- System must be equipotential grounding. Grounding device must meet dual requirements of anti-interference and electrical safety, and should not be shorted or mixed with the adjacent lines in the strong power grid. When system is independently grounded, grounding impedance should be less than 4Ω , and cross-sectional area of grounding conductor must be not less than 25m^2 .

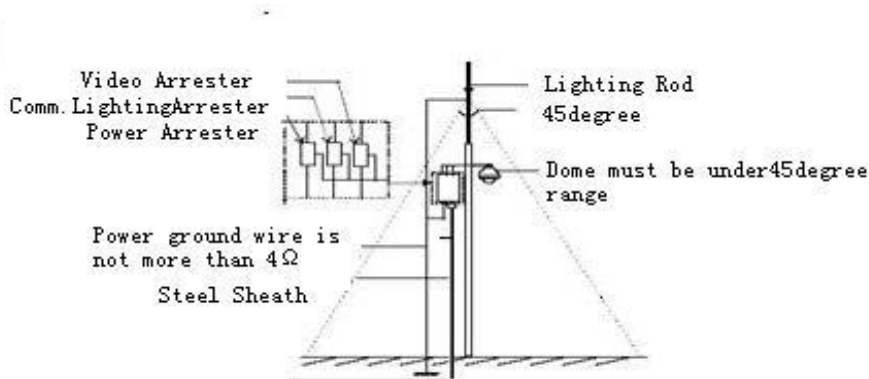


Fig 25

Appendix II Clean Transparent Cover

In order to assure a clear image of dome, the under cover of dome should be cleaned regularly.

- Be careful when cleaning and hold the outer ring of under cover by hands to avoid directly

touching with it. Because the acid sweat of finger membrane may corrode the surface coating of under cover. Hard tool scratching the under cover may lead to blurring the images of dome so that affecting image quality.

- Please use a soft enough dry cloth or other alternatives to wipe internal and external surface.
- If dirt is serious, user can use a mild detergent. Any senior furniture cleaning products can be used to clean the under cover.

Appendix III Common Knowledge on RS-485 Bus

1. Basic Feature of RS-485bus

According to industry bus standard of RS-485, RS-485 bus is half-duplex communication bus with the characteristic impedance of 120Ω , whose maximum load capacity is 32 payloads (including the master device and the controlled device).

2. Mode of Connection and Terminal Resistance

2.1 Industry standard of RS485 bus requires that connection in a daisy chain should be used between the devices with 120Ω terminal resistances connected at the both ends.

As shown in fig. 26 and fig. 27 is simplified connection, but the distance of part "D" shall not beyond 7 meters.

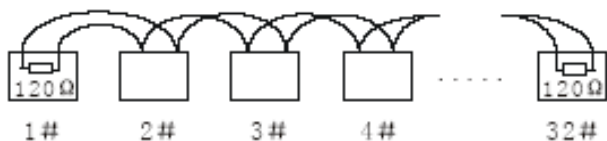


Fig 26

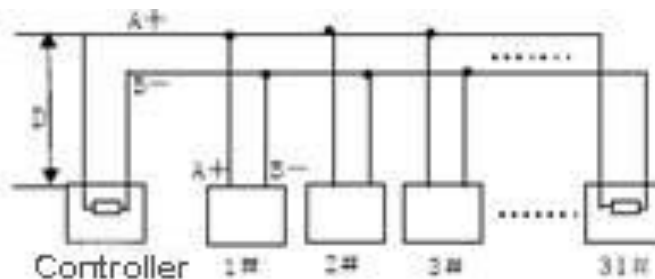


Fig 27

2.2 120Ω terminal resistance is connected as shown in fig 27.

120Ω terminal resistance is available in the circuit board and the connection is shown as following:

When needing to connect 120Ω resistance, toggle the 8th bit of DIP switch SW2 to "ON" . This way the 120Ω resistance is connected to the circuit.

Appendix IV Address Code Mapping Table

SW1 DIP Switch sets the dome address, which using binary encoded. The 8th is the top bits, and 1st is the lowest bits.

Toggle the code bits of DIP Switch to ON, then the corresponding location is “1”. Conversely, it’s “0”.

Following is a dome address code mapping table to set PELCO-D:

Address	Switch Settings							
	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
---	----	----	----	----	----	----	----	----
251	ON	ON	OFF	ON	ON	ON	ON	ON

252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

Following is a dome address code mapping table to set PELCO_P:

Address	Switch Settings							
	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
---	----	----	----	----	----	----	----	----
251	ON	OFF	ON	OFF	ON	ON	ON	ON

252	ON	ON	OFF	ON	ON	ON	ON	ON
253	OFF	OFF	ON	ON	ON	ON	ON	ON
254	ON	OFF	ON	ON	ON	ON	ON	ON
255	OFF	ON	ON	ON	ON	ON	ON	ON
	Issue		Possible Reason				Solution	
256	ON	ON	ON	ON	ON	ON	ON	ON

Appendix III Exception Handling

After power is applied there is no action (self-test) and no video image.	Cable harness is improperly connected	Verify that the orientation of the connector input
	Input power voltage is too low	Verify the voltage of the input power
	Power supply does not work	Change a new power supply
Self -test is normal but cannot control dome	Wrong communication settings	Set the correct protocol, baud rate and address of dome device
	Improper connection of control cable (polarity)	Verify the polarity of the RS485 connection as per the instruction manual
Noise after self -testing	Mechanical obstruction	Verify and correct it
	Camera module is not installed	Correct
	Low power	Change the correct power supply
Image is no stable.	Low power	Check the power supply or make sure the power input is AC24V / DC12V
	Video cable is improperly connected.	Verify the connection of the video cable
Image is blurring	Camera is on manual focus	Change to auto focus
	The lens is dusted	Clean the lens
Controlling the dome not smooth	Power is too low	Change the AC24V / DC12V Power
	Communication distance is too long	Make sure the distance is in the allowed range
	RS485 cable is not properly connected.	Make the RS485 is properly connected.
	Too many domes connected	Make sure the connected dome is in the allowed quantity

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