Intelligent IR high speed dome camera

CCTV System

User Manual

Before operating this product, please read this instruction manual carefully.

Default setting: Protocol (PELCO-D), Baud rate (2400bps).

Notes on Safety

1. Installation or maintenance personnel on the quality requirements

◎With engaged in CCTV system installation or maintenance of the qualification certificate.

◎With qualifications in the high-altitude operations.

◎With low voltage wiring and low voltage electronic circuit wiring basic knowledge and skills.

◎And be familiar with the product instructions.

2. The requirements for lifting equipment

◎Using it in a suitable installation place and the safety lifting equipment installation of the installation method.

◎Lifting equipment must reach the installation location with adequate lifting height.

◎Lifting equipment has a good safety performance.

Notes Issues

1. Care transport

In order to prevent the weight, severe vibration and soak damage of products when transportation and storage. This product must be packaged in the form fission transport, delivery or return both works to the factory repair, it's not a warranty if the issues with the overall mode of transport after the assembly of any product damage caused.

2. When failure

If the product smoke, an abnormal smell or does not work properly, turn off the power and disconnected the power cord immediately, and stop using the product as well cut the power, then contact the company.

3. Do not disassemble or modify

Do not open the shell, or it may be dangerous or cause damage. If you want configuration or maintenance, please contact the company.

4. Do not put other goods into dome

Make sure there should be no metal objects or flammable inside the product. If there is foreign body inside the product, it may cause fire, short circuit or damage. If there is water or liquid into the camera, turn off and disconnect the power cord immediately, and then negotiate with the company. To protect the camera, to avoid the rain, water erosion careful.

5. Be careful and let go for the goods

To avoid injury, do not drop the camera or subject it to strong vibration or shock.

6. Set in a place far away from electric and magnetic fields

If you set the TV, radio transmitters, electromagnetic devices, transformers, loudspeakers near their electromagnetic fields will interfere with the image produced.

7. To avoid moisture and dust

To avoid damage of the camera, do not set the camera in a smoke or steam, the temperature is too high or a dusty place.

8. Avoid high temperatures

Do not set the heating stove or other heat sources in the vicinity, such as spotlights. Do not set the place susceptible with sunlight. otherwise the camera will cause deformation discoloration or other damage. When set in the ceiling, near the kitchen or boiler room, the temperature may rise very high.

9. Clean

Remove dirt on the shell with a soft cloth. For it can use a soft cloth coated with detergent solution and wring loosen, then dry with a soft cloth and then wiped dry. Do not use gasoline, paint thinner or other chemicals to clean the shell, or it may cause deformation and paint peeling. When using chemical wipes, be sure to read all the instructions that came with. Do not let the plastic and rubber materials for a long time and case contacts, or will cause damage and paint peeling

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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

Ⅰ Introduction

Thank you for purchasing our speed dome, an intelligent, IR high-speed dome with a high-performance DSP camera and sophisticated zoom lens. It is an advanced technological surveillance product combining an all-direction variable speed dome and digital decoder all in one unit. It can aim quickly and scan continuously, making Omni-directional and non-blind-spot monitoring into reality. Additionally, it can quickly adapt to changing environments with its 18x optical and 12x digital zoom with precise stepping motors. The advanced stepping motor technologies enable the dome to rotate smoothly, respond sensitively and aim precisely. The IR speed dome camera has a memory function so when the power cuts off it can auto resume to previous working status. Use our high-performance speed dome “When it Counts.”

All of the features make the intelligent IR high-speed dome camera fit for a wide range of applications such as intelligent building, bank, street of city, airport, station etc,.

Ⅱ Technical Data

Technical Parameters of the Intelligent IR High-speed Dome.

Model	IR High-speed Dome
Power Supply	AC/DC Adaptive （15V ~28V）
Operating Temperature	Indoor ：（0ºC～+40ºC）Outdoor：（-40℃～+60℃）
Operating Moisture	≤95% no freeze
Power Consumption	≤20W
Communication	RS-485bus
Protocol	Automatic Identification（PELCO_D / PELCO_P /3D）
Baud Rate	1200 bps / 2400 bps / 4800 bps / 9600 bps
Address	Hard Add. 1~255 Soft Add. 00~64（00when hard address effective）
Mechanical Zero Calibration	Support
Horizontal Rotation Speed	1～160°/s（1～64grades speed change）
Horizontal Rotation Range	360º
Tilt Rotation Range	94º
Auto Flip	Second segment control（grade level 180º two vertical90º）
Speed & Zoom Matching	Speed Rate
IR light control	Zoom to follow/manual/remote lights/low beam
360° Tour Speed	15～64grades speed change
360° Vertical Positioning Cruise	00~70°Editable（when 00°，vertical positioning in the manual
A-B Points Scan	Arbitrarily set

A-B Points Scan Speed	5 ~ 160°/s speed change（15～64grades speed change）
Power Mode	Power Down Memory/360°cruise/two scan/preset cruising
Park Position	1~64preser（Editable）
Park Waiting Time	1~60minutes（Editable）
Dwell Time of Preset	5~60S
Preset Quantity	220
Preset Running Speed	160°/s
Cruise Group Qty	3groups(16points at the same stop position and length of stay edit)
Cruise Points Qty per Cruise Group	16 points
OSD Menu	English
Support Camera	Auto Identification（SONY、LG、CNB、Domestic、Safer）
Video Freeze	Support
BLC	Support
Zoom	Support
CAD	PELCO Instruction Set
Waterproof	IP66
Lighting	Moment 3000V
Fan & Heater	Auto Temperature Control

III Settings

3.1 Basic Requirements

All electrical work must comply with the latest electrical codes, fire regulations and relevant laws and regulations. On inspection of all random according to the packing attachments are complete, the application of the ball machine to determine the place and whether the installation is consistent with the requirements. If not match, please contact the supplier. Please according to the work environment requires to use this product.

3.2 Verification of Installation Space and Structural Strength of the Installation Site

Confirm the installation location to accommodate installation of the product and its structure enough space. Confirm the installation of the ceiling, the wall, support must be able to support the carrying capacity of the dome and its installation structure of the total weight with a 4times safety factor.

3.3 Cable Preparation

Select the cable according to the transmission distance, RS485 communication cable（Appendix Ⅲ）.

Minimum specifications for video coaxial cable: 1)75Ω Impedance; 2) All copper wire; 3)95% Braided copper mesh shielding.

Domestic Model	International Model	Max Distance(ft/m)
RG59/U	RG59/U	750 ft (229m)
5C-2V	RG6/U	1,000 ft (305m)
7C-2V	RG11/U	1,500 ft (457m)

3.4 DIP Switch Settings

Agreement and under the control of the ball machine address, set DIP switch (see Ⅳ basic settings).

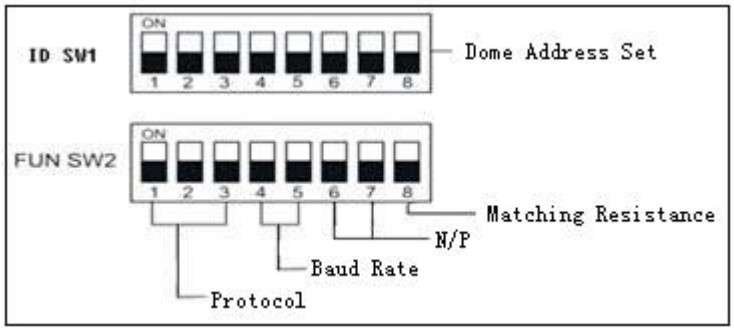
3.5 Please Save All Packaging Materials of the Product

After open the packaging, please keep the original packing materials strike machine, so when problems occur, use the speed dome camera packaging materials packaged, sent to agents or return to factory processing. Non-original packing material may result in accidental damage in transit, resulting in additional costs.

4 Basic Setting

4.1 Dome Address, Transmission Speed, Protocol Setting

Before installation, make sure that the dome used by the protocol, baud rate and address code control system is fully consistent with the corresponding DIP switch position. As below:



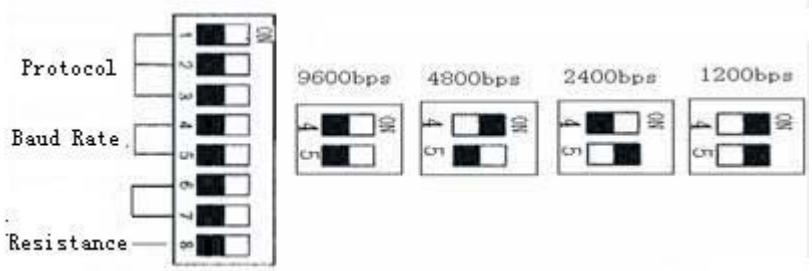
4.1.1 Speed Dome Camera Communication Protocol Setting

Automatic Identification speed dome control protocol, As PELCO_P、PELCO_D et,.

4.1.2 Speed Dome Camera Transmission Speed Setting (Baud Rate Setting)

The 4th, 5th bit of DIP switch SW2 is the communication baud rate settings, factory default is 2400 bps.

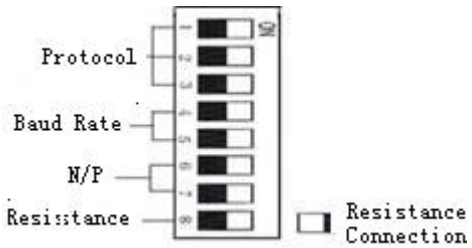
BAUD RATE: 1200 bps 、2400 bps 、4800 bps、9600 bps Optional.



4.1.3 RS-485 bus Matching Resistance

The 8th bit of DIP switch SW2 is the match resistor selection. To the control center, for prevent the RS-485 communication signals and other signal reflection and interference, leave the control center of the dome end of the infrared communication interface to be parallel matching resistor.

DIP switch SW2 has a matching resistor of the control switch, the 8th bit micro-switch to the ON state (set below), that will match CLP has access to RS-485 bus.

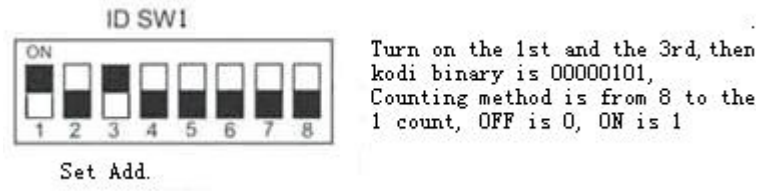


4.1.4 Speed Dome Can Automatic Identification Zoom Camera

Speed dome supports automatic identification zoom camera has LG、CNB、SONY、Domestic etc..

4.1.5 Speed Dome Address Code Setting

DIP switch SW1 is the address settings of the camera, it is an 8-bit switch, each switch corresponds to a binary code number "0" or "1." Off state is "0", open to "1." Switch on from the switch of DIP switch, computing the address number. As shown:



Example: <As Chart> Turn on the "1" and "3" position on DIP switch (allocated to the ON position), then the binary code: 00000101, the corresponding address is: 5. (Corresponding to binary code and address, refer to the back "address codes correspond to Table") (see Appendix IV).

Note: the actual address of DIP switch is PELCO_D agreement control address, the control address of PELCO_P agreement is only plug 1 on the basis of the PELCO_D agreement control address.

5. Basic Function of Dome Camera

Since different methods in control systems vary, the general should be based on the manufacturer's operating manual system shall prevail, in some cases there will be some special requirements and methods of operation, contact your dealer to obtain the necessary information.

5.1 Objective Tracking

Users can use the joystick on the keyboard to control the speed dome, down, left, right turn, used to track the moving target or transfer horizon, and by adjusting the zoom to change the perspective of the size or the size of the target image. By default the camera auto-focus, auto iris of the state, with the rotation of the lens, the camera will automatically adjust according to the scene quickly to make changes, instantly get a clear picture.

5.2 Speed Proportional Function

Horizontal and vertical velocity as the zoom ratio is automatically to change. When the zoom ratio

increases, the camera slow down the speed automatically; when the zoom factor is reduced, the camera accelerate the speed automatically in order to obtain better tracking of objects.
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5.3 Auto Scanning

The camera can scan through the keyboard automatically <call 99 preset> to start the auto scan function operating rocker when camera scans the state automatically, then you can exit the Auto Scan function.
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5.4 Preset Position Setting & Adjusting

Preset function was set by controlling the ball machine or call the level of infrared dome camera angles, vertical angles and zoom the camera lens and other parameters stored in digital form to infrared dome camera, you need to call these parameters can be made when the dome IR camera adjusted to the preset position when the state set.

To control the needed preset point 1 by the keyboard, after setting ok, then use the keyboard to call the preset position 1. The operator can quickly and easily set by controlling the keyboard and other equipment, or call the preset position, infrared dome camera support 220 preset positions.

(Different communication protocols supported the preset number are different. For more details, it should refer to the parameters of manufacturers).

5.5 Applications of Auto Pattern Tours *

Use the keyboard to set the pattern tours of dome camera, itself can be set 3 groups pattern tours, each support 16 preset positions. If need use, first set the dome camera preset parameters, if not re-set the preset parameters, then it will be the factory default preset position parameter when runs pattern tours.

5.5.1 Pattern Tours Setting *

Pattern tours in each preset speed is 5 to 63, each residence time is 5 ~ 60s.

5.5.1.1 The product can be set up pattern tour for 3 groups, each group of 16 editable presets pattern tours, and each preset stop point can be edited through the menu, residence time of each point can be edited through the menu.

5.5.1.2 Add the needed pattern preset to the pattern tours.

5.5.1.3 Residence time of each preset in the OSD menu can be set to 5-60s.

5.5.1.4 Start pattern methods.

Pattern tour 1: Use keyboard <call 98> to start the inspection group 1, (default setting) preset positions is 1 to 16, 6seconds residence time for each point.

Pattern tour 2: Use keyboard <call 97> to start the inspection group 2, (default setting) preset positions is 17 to 32, 6seconds residence time for each point.

Pattern tour 3: Use keyboard <call 96> to start the inspection group 3, (default setting) preset positions is 33 to 48, 6seconds residence time for each point.

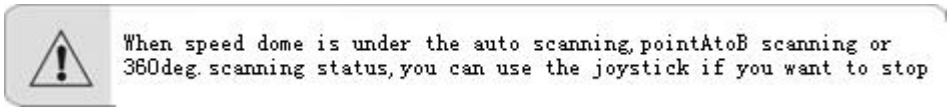
Note: Before start pattern tours, it must set the appropriate preset first. If there is effective operation of any new instructions, it will exit the current cruise.

5.5.2 Point A to B Scanning

Speed dome camera can achieve A, B scan between two points automatically, through the OSD menu can set the A point and B point position and velocity parameter. A, B two points preset settings freely.

<Call 92> AB points to start the scan, running two nearest distance between two points to run when two points scan.

Note: if cancel or reset the A, B point, just reset the A, B point, and cover the original A, B points.



5.5.3 360°Scanning *

Speed dome camera can achieve 360-degree scan, through the OSD menu for setting the parameters of speed

<Call 99> started 360 consecutive scans. To facilitate users, scanning speed with the zoom value when the size of the change. The larger zoom, scan speed moderated.

5.6 Speed Dome Camera Control Function

5.6.1 Zoom Control

Users can control the keyboard to adjust zoom distance, or get a panoramic view of the required close-range view. When the stick started shaking, the immediate cessation of zoom

5.6.2 Focus Control

Zoom lens, the camera will focus the center of the screen scene automatically, maintain a clear picture.

The user can manually focus to achieve the desired image effects in exceptional circumstances.

In the following cases camera will not autofocus on the camera target:

（1）Target is not the center of the screen.

（2）While observing the distant and near targets, both before and after can not guarantee clear.

（3）Target light objects. Such as neon, spotlights and other light objects.

（4）Target with water droplets or dust behind the glass.

（5）The target moves too fast.

（6）Monotonous large area targets, such as walls.

（7）Target already too dark or fuzzy.

5.6.3 BLC

When the background appears bright, the object becomes dark, like a shadow the same. Backlight compensation function is the camera lens in focusing light the dark background of the target can be automatically compensate for the brightness of the background light adjustment, to avoid the high background brightness caused by a mass of light throughout the picture, the target because of the dark and not identifiable, to obtain a clear image.

<Call86>Start BLC

<Call87>Close BLC

5.6.4 Iris Control

(1) Factory default is automatic camera aperture. Through automatic sensing changes in ambient light, to make quick adjustments, and output the image brightness and stability.

(2) Users can control the keyboard, manually adjust the aperture size to get the required picture brightness

Large aperture open, press and hold OPEN key; aperture off small, keep pressing the CLOSE button.

(3) By controlling the keyboard up, down, left, right or zoom to resume auto iris (the user is using the auto iris).

5.7 Memory as Power Off

In order to prevent a sudden power off, lose the data after power. Speed dome camera has a power and memory functions, it can be restored automatically, after restart working condition before the power failure.

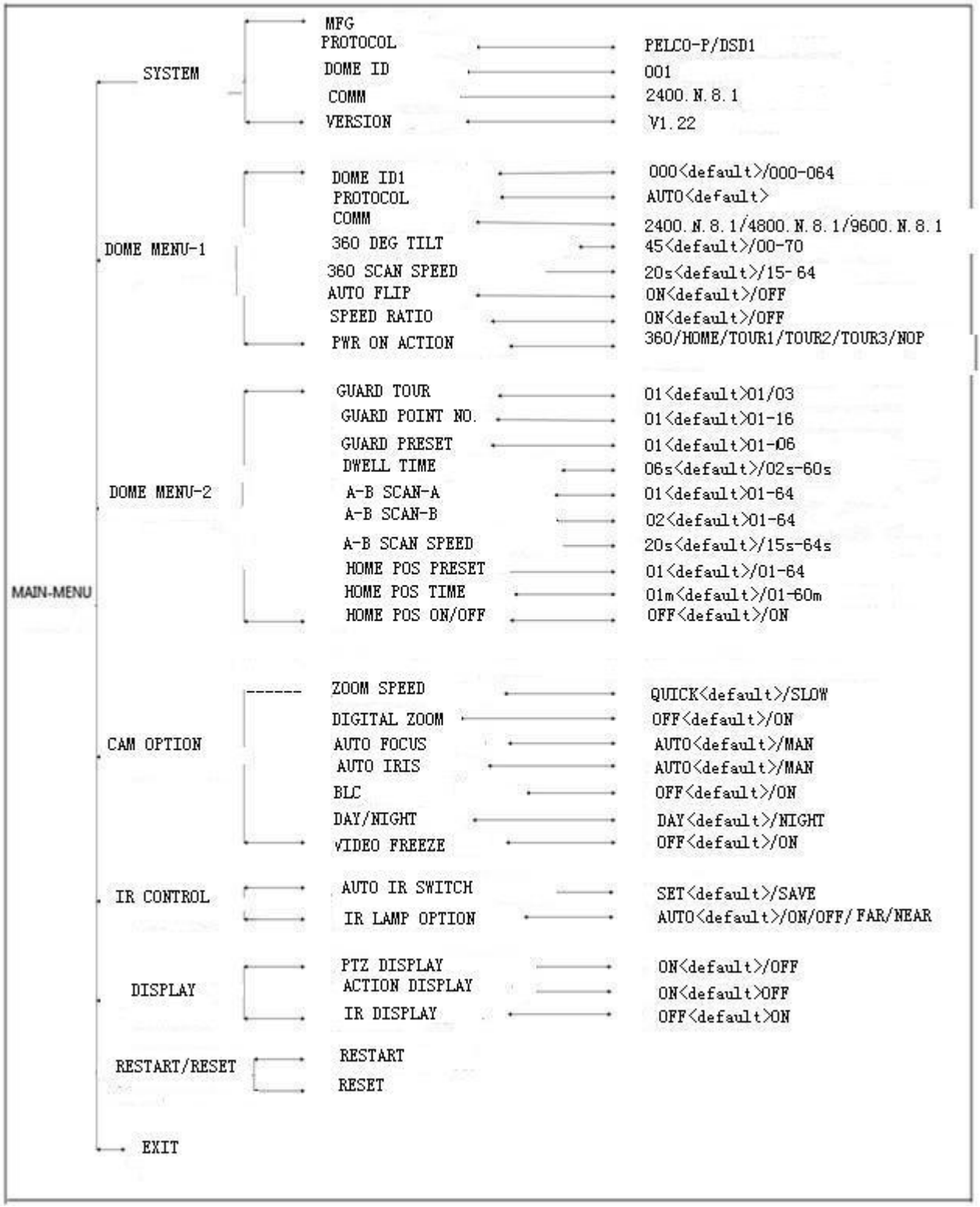
For example, the work before the power off is to scan two scan or pattern tours, after power on, the dome will automatically perform the work before the power off.

5.8 Auto Reposition

Speed dome camera automatic reposition is the control personnel in the operating period of time not to operate infrared dome camera, the speed dome camera returns to the user of an important pre-set position automatically. OSD menu can be set up automatic homing function of time, enable or disable this function.

6. OSD menu

6.1 Menu Index



6.1.1 Enter/Exit Menu

This infrared dome camera control protocol in accordance P/D/3D provides 95 preset positions by calling the command to open the menu, call the preset 94 bit command to exit the menu, please refer to the instructions of other control devices.

6.1.2 Operation

This series infrared dome camera with built-in menu to the camera, set the parameters of the lens.

Basic operation of menu including mobile menu chain, enter the next menu to return to the previous menu, select the menu, change settings, confirm the change and cancel the change.

The command PTZ up and down: move the menu chain and change settings.

Open the order at the right PTZ: Go to a menu or select the menu and confirm the changes.

Close the order at the left PTZ: return to previous menu and cancel the change.

6.2 OSD Menu Setting

6.2.1 MAIN MENU

SYSTEM ->

DOME MENU-1 ->

DOME MENU-2->

CAM OPTIONS ->

IR CONTROL ->

DISPLAY ->

RESTART/RESET ->

EXIT

Note:

1, with the "->" indicates a lower level menu

2, by shaking the keyboard joystick "Up ↑, Down ↓" move up and down the menu cursor. To the "Left ←" shake, exit the mode, To “Right→” shake, enter the mode.

3, confirm the entry mode the cursor to "☼", you can by shaking rocker "↑ ↓" to modify, and then to the "←" shaken, exit the mode that has been changed successfully, then go on the next operation.

6.2.2 SYSTEM OPTIONS

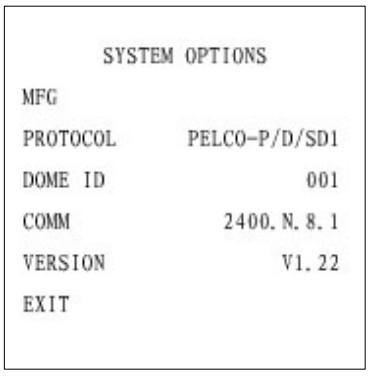
MFG

PROTOCOL

DOME ID

COMM

VERSION



✧ MFG

English characters can display information 15

✧ PROTOCOL Factory default: PELCO-P/ PELCO-D/SD1

Displays the current dome control protocol

✧ DOME ID Factory default: 001

Displays the current address of dome

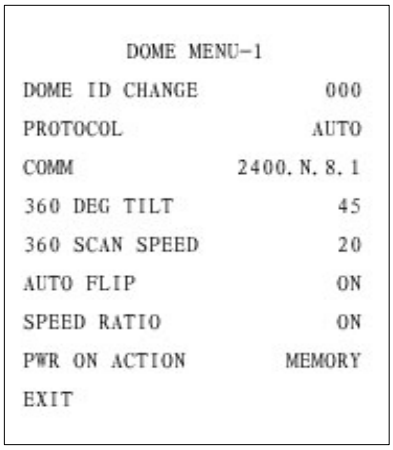
✧ COMM Factory default : 2400.N.8.1

Communication format: Baud rate. Efficacy bit. Data bit. Start bit

✧ VERSION Factory default: V1.20

Software version will be updated and replaced with the product

6.2.3 DOME MENU-1



DOME ID CHANGE

PROTOCOL

COMM

360 DEG TILT

360 SCAN SPEED

AUTO FLIP

SPEED RATIO

PWR ON ACTION

DOME ID CHANGE Factory default: 000

Software addresses 000 to 064 addresses can be set, which is 000, the soft address is invalid, after change need to be restarted.

PROTOCOL Factory default: AUTO

Software agreement choose the fixed automatic

COMM Factory default: Change by dial code

Soft baud rate selection mode 2400/4800/9600.N.8.1

360 DEG TILT (Horizontal or vertical orientation angle cruising) Factory default: 45

Cruising levels are 00-70 ° vertical angle positioning options (00 Orientation Manual)

360 SCAN SPEED (360scanning speed) Factory default: 20grades

360 Scanning Speed 15 ~ 64 grades can be set

AUTO FLIP (Flip Horizontal) Factory default: ON

Flip Horizontal mode is divided into ON, OFF modes

SPEED RATIO (Speed ratio) Factory default: ON

The proportion of variable speed mode is divided into ON, OFF modes

PWR ON ACTION Factory default: POWER

Power including power off memory, TWO point scanning , 360°Rotation、PARK、SCAN1、SCAN2、SCAN3 and NOP for eight modes

6.2.4 DOME MENU-2

GUARD TOUR

GUARD POINT NO.

GUARD PRESET

DWELL TIME

A-B SCAN-A

A-B SCAN-B

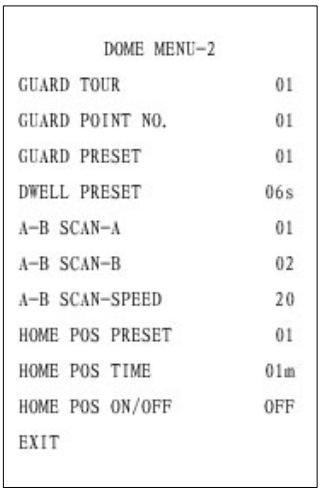
A-B SCAN SPEED

HOME POS PRESET

HOME POS TIME

HOME POS ON/OFF

CRUISE GROUPS Factory default: 01



Preset mode cruise group has 3 selection, cruise group 01, cruise group 02, cruise group 03

Cruise Group 1																
Cruise Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Preset	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stay time	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s
Cruise group 2																
Cruise Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Preset	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stay time	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s
Cruise gruop3																
Cruise Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Preset	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stay time	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s	6s

DWELL TIME Factory default: 06s

Cruise residence time of each preset 02 to 60 seconds can be set.

A-B SCAN-A Factory default: 01

A point can be set to scan two 01 ~ 64 preset positions.

A-B SCAN-B Factory default: 02

A-B points can be set to scan B 01 ~ 64 preset positions.

A-B SCAN SPEED Factory default: 20

A-B scan speed mode can be set from 15 to 64.

HOME POS PRESET Factory default: 01

Guard preset mode can be set to 01 ~ 64 preset positions.

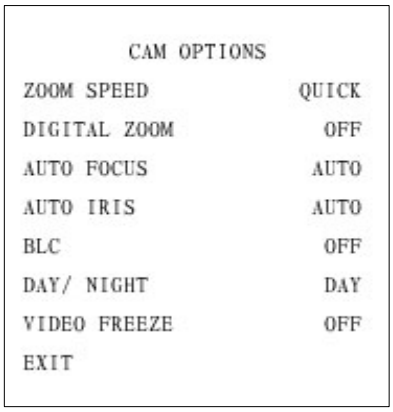
HOME POS TIME Factory default: 01M

According to demand it can be set 01-bit to 60-minute park time wait.

HOME POS ON/OFF Factory default: OFF

Below the park position switch there is the mode ON (open), OFF (off) two modes of selection.

6.2.5 CAM OPTIONS



ZOOM SPEED

DIGITAL ZOOM

AUTO FOCUS

AUTO IRIS

BACKLIGHT COMP

DAY/ NIGHT

VIDEO FREEZE

ZOOM SPEED Factory default: QUICK

Zoom speed mode has QUICK、SLOW for 2 types

DIGITAL ZOOM Factory default: OFF

Digital Zoom mode has ON、OFF for 2 types.

AUTO FOCUS Factory default: AUTO

Auto focus mode has AUTO 、MAN for 2 types

AUTO IRIS Factory default: AUTO

Auto Iris has AUTO、MAN for 2 types

BACKLIGHT COMP Factory default: OFF

BLC has ON、OFF for 2 types

DAY/NIGHT Factory default: DAY

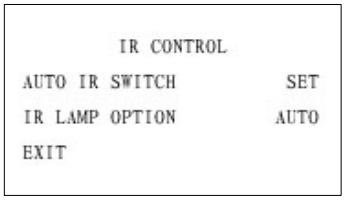
DAY/NIGHT has DAY、NIGHT for 2 types

VIDEO FREEZE Factory default: OFF

Video freeze has ON、OFF for 2 types

Note: The function is need currently camera support will be achieved.

6.2.6 IR-LIGHT



AUTO IR SWITCH

IR LAMP OPTION

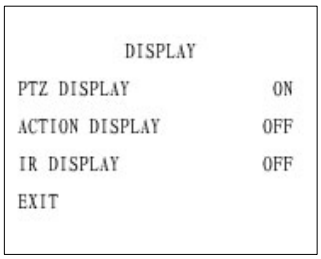
AUTO IR SWITCH Factory default: SET

Infrared light in camera, the size of the current zoom position lamp switch SET (setting) or SAVE (keeping)

IR LAMP OPTION Factory default: AUTO

IR-light has AUTO、ON、OFF、DIST and NEAR for 5 types

6.2.7 DISPLAY



PTZ DISPLA

ACTION DISPLAY IR Light DISPLAY

PTZ DISPLAY Factory default: ON

Shows the current level of dome/vertical coordinates has ON、OFF for 2 types

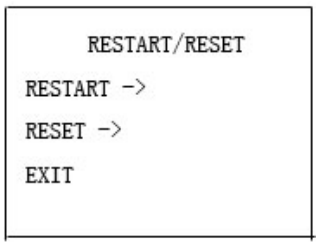
ACTION DISPLAY Factory default: ON

Shows the current information has ON、OFF for 2 types

IR DISPLAY Factory default: OFF

Shows the current IR light working information has ON、OFF for 2 types

6.2.8 RESTART/RESET



RESTART

RESET

RESTART

RESET

After the implementation of the model, the ball machine data recovery to factory default. If you have the hardware (such as the camera) replacement, system data will automatically reset.

6.2.9 EXIT

Back menu (Data is saved automatically after exit OSD menu).

7. Automatic Temperature Control

It can be equipped with fan and heater, through the circuit temperature inside the dome of the dome camera to make the appropriate cooling or heating control.

8 PELCO_D/P Operate

Special feature of high-speed dome PELCO-D protocol does not correspond to the command, you need to place orders by calling a special pre-control of these functions, see table below.

Chart 1 by calling the following special method of preset to achieve the related functions of speed dome.

Preset Point Adjustment			
33	Horizontal position180 º	87	BLC off
34	Dome reset	88	Video freeze on
79	Open the elec. zoom	89	Close horizontal freezing
80	Close the elec. zoom	92	Start 2points scanning
81	Auto day/night	94	Turn off OSD menu
82	Turn night	95	Turn on OSD menu
83	Turn day	96	Preset cruise group3
84	Force on far light	97	Preset cruise group2
85	Force on near light	98	Preset cruise group1
86	Turn on BLC	99	Start360°auto scanning

Note: If you use other control devices control the infrared dome camera, due to protocol limitations, some special features of speed dome may not be realized.

Appendix Ⅰ Lightning, Surge

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

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

● Signal high-voltage transmission line must be maintained between equipment or high voltage cable at least 50 meters.

● Try to choose an outdoor wiring laid down along the roof line.

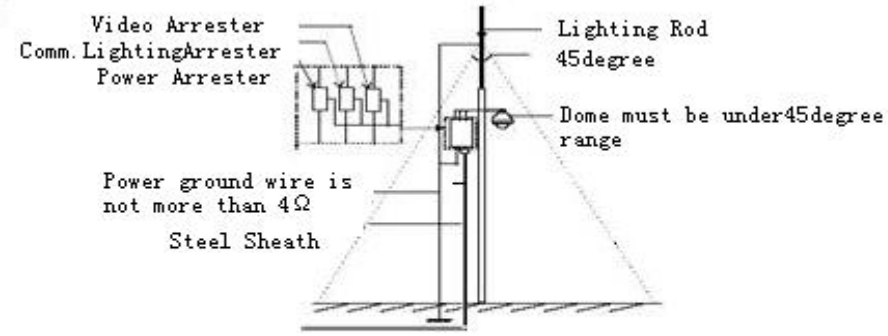
● The area which opened must be sealed by way of pipe buried wiring, and steel with a little ground, the absolute way of prohibiting the use of overhead wiring.

● Strong thunderstorms in the area or areas of high induced voltage (such as high voltage substations), power must be taken to the installation of additional equipment and installation of lightning rod lightning protection measures.

● Outdoor unit and line of lightning protection and grounding design must be considered for reunification with lightning protection of buildings, and comply with the relevant national standards, industry standards.

● Equipment grounding system must be. Grounding system must meet the dual anti-interference and electrical safety requirements, and shall not be adjacent lines are short and strong network connected directly or mixed. When a separate grounding system, grounding impedance of less than 4Ω, grounding conductor cross-sectional area must be not less than 25 ㎡.

Chart25



Appendix Ⅱ Clean Transparent Cover

In order to assure a clear image of dome, the under hood of dome should be clean regular,

● Be careful when cleaning, hold hands under the outer cover to avoid direct contact with the lower guard, finger sweat acidic membrane may be surface corrosion coating under the hood, hard scratching may lead to the ball under the machine cover image blurred, affecting image quality.

● Use a soft, dry cloth adequate substitute for cleaning or other external surface.

● Such as dirt grave, you can use a mild detergent, no senior furniture cleaning products can be used to clean the under hood.

Appendix Ⅲ RS-485 bus Common Sense

1. RS-485bus Feature

According to industry bus standard RS-485, RS-485 bus for the characteristic impedance of 120Ω industrial half-duplex communication bus, the maximum load capacity of 32 payloads (including the master device and the accused device.

2. RS-485 bus Transmission Distance

When using a 0.56mm (24AWG) twisted pair cable for communication, according to the different baud rate, the theoretical maximum transmission distance as follows:

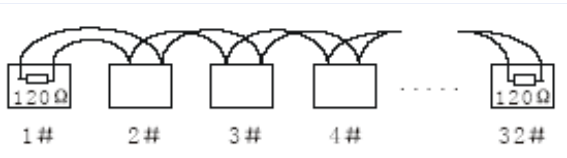
：

Baud Rate	Max Distance
2400 bps	1800m
4800 bps	1200m
9600 bps	800m

When using the smaller of the communication cable, or strong electromagnetic interference environment in the use of the product, or have more on the bus equipment; maximum transmission distance is reduced accordingly. On the contrary, the maximum distance longer.

3. Connection with the Termination Resistors

3.1 Industry standard RS485 bus between the devices connected using daisy chain mode, two must be connected with 120Ω termination resistors. Figure 26 Figure 27 can be simplified connection, but the "D" distance shall not exceed 7 meters.



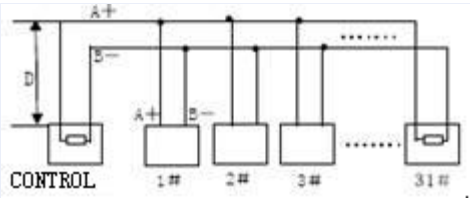


Chart 26 Chart 27

3.2 Equipment Terminal 120Ω resistor is connected as shown in chart27.

120Ω termination resistance device resistance in the circuit board is available, the connection as follows:

When you need access to 120Ω resistor, to the first 8-bit DIP SW2 toggle "ON" can be. This access circuit 120Ω resistor.

AppendixⅣ Address Code Corresponding to The Table

SW1 DIP Switch to set the speed dome address. Address set binary mode, 8 bit for maximum bit, bit 1 is the lowest position the following is the speed dome address table.

Address	Switch Setting							
	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
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
Address	Switch Setting							
	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF

45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
-------	------	------	------	-------	-----	------	------	------
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

Note:

The encoding bit DIP switch toggle "ON" at the corresponding position "1", otherwise "0".

Copyright Statement

Exception Handling

Issues	Possible Reason	Solution
Power on, no movement, no image, indicator light does not light	Power line connected wrong	Correct it
	Power damaged	Replace
	Blowout	Replace
	Power line be connected bad	Check it
Power on, self check, has imag can't control, indicator light doe not flicker	The machine's address code or baud rate is	Reset
	Protocol wrong	Correct it
	RS485 bus be connected wrong	Check it
Camera can't reposition itself. (camera can no longer move)	Mechanical failure	Repair it
	Camera incline	Correct it
	Power is not enough	Replace it
Image is not stable	Video line connected bad	Check it
	Power is not enough	Replace
Image is dim	Focus in manual state	Operate the machine or adjust a preset position
	Dome is dirty	Clean it
Control is not stable	Power supply is not enough	Change a certified power supply
	The matching resistance of the furthest speed dome is not working	Makes the matching resistance work
	Camera can not control resulting from incorre operation	Reboot the machine