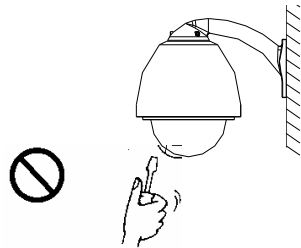


I. Notice

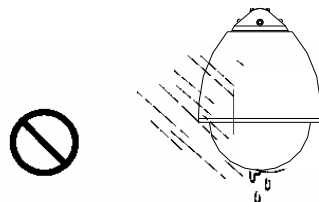
1. Before install and use the full-view Speed Dome Video Camera, please read this user's manual first.
2. **This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company. For units intended to operate from battery power or other sources, refer to operating instructions.**
3. Interior of the Dome device are precision optical and electrical instruments. Heavy pressure, shock and other incorrect operations must be avoided during the processes of delivery, storage and installation. Otherwise, may cause damage on product.

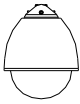
4. Please do not remove and disassemble any internal parts of Dome video camera by yourself in order to avoid normal usage being impacted. There is no parts inside the device which can be repaired by user self.



5. During usage, user should abide by all electrical safety standards and adopt the special power provided with the Dome video camera. During transmission, RS-485 and video signal should be retained enough distance with high-voltage equipments or cables. When necessary, thunder-proof, surge-proof and other protecting measures should be carried out.

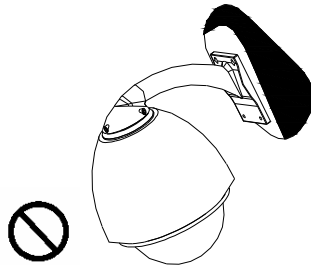
6. This device is for speed dome installation and use in order to avoid the Dome video camera to be rained or be affected with humidity, etc. Please do not use the product in humid place. If the video camera is installed outdoor, please make sure the device being protected by sealed shield. The installation and use in open air without any protection is forbidden.

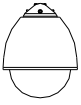




User's Manual for Speed Dome Camera

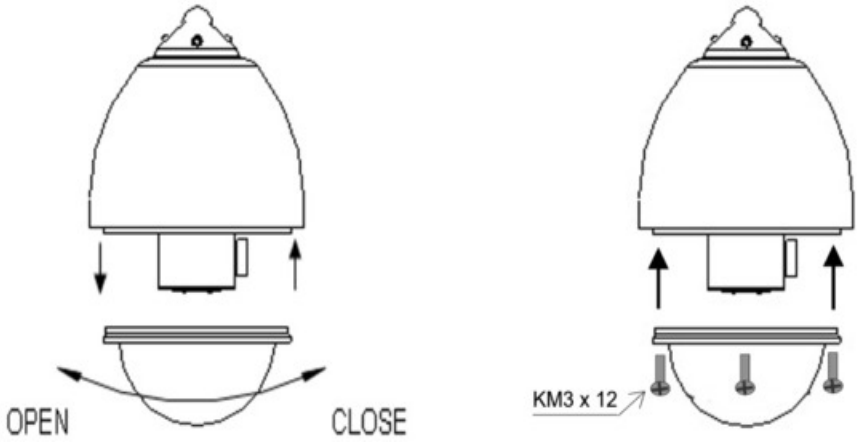
7. Please do not use the product under the situations of exceeding restrictive temperature, humidity or power supply specifications.
8. No matter whether power of the speed Dome video camera is connected or not, please do not take the video camera aim at sun or very bright object and do not take the video camera aim at or monitor bright static object for long time.
9. Please do not use strong or caustic washing lotion to clean the main body of the speed Dome video camera. After dirt is cleaned up, please use cotton fabric to clean the product. When dirt is not easy to clean up, shall use neutral washing lotion to clean and dry off gently.
10. Shall use the speed Dome video camera carefully and avoid being stroked or shocked. If operating is improper, the product may be damaged.
11. When install the Speed Dome Video Camera, please install it in the place with enough holding force.
12. If camera lens adheres with dust, please use special lens paper to clean up.
13. When disassemble the Acrylic DOME shield, please wear cotton gloves to process in order to avoid surface of the product being scraped.

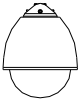




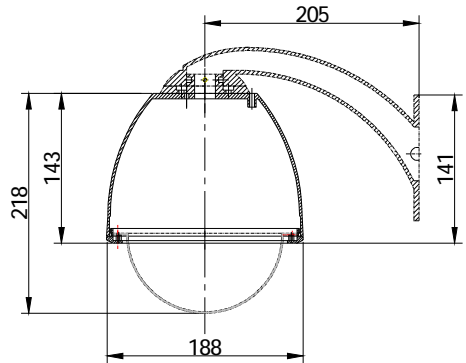
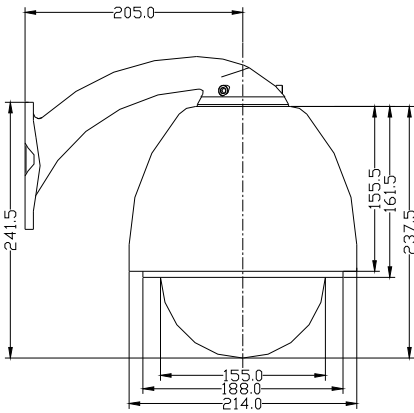
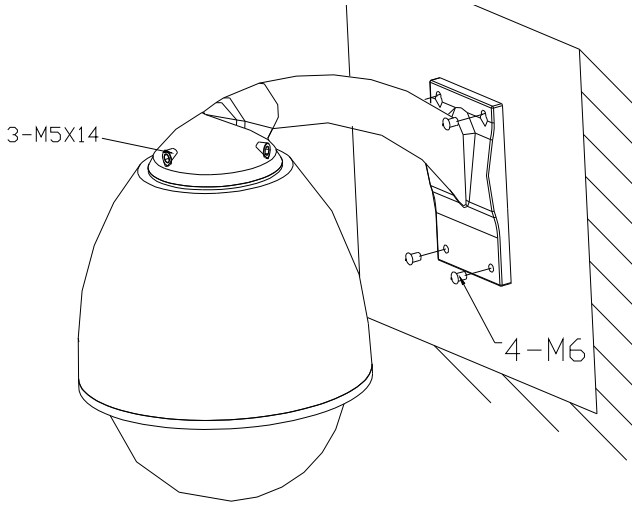
Installation Instruction of Video Camera

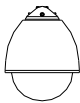
5. Install Acrylic shield



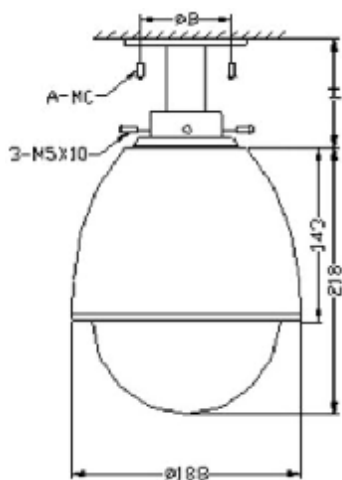


II. Install Bend-Tube-Style Bracket



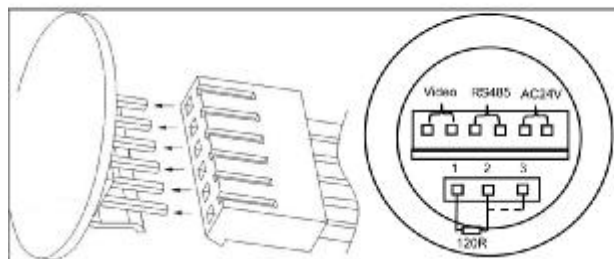
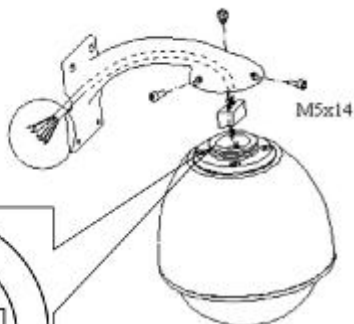
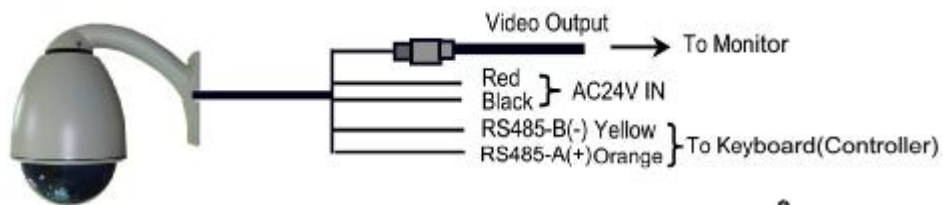


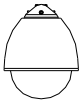
III. Install Straight-Tube-Style Bracket



Item Unbent Bracket Type	H	A	B	C
40cm	400mm	4	75mm	6
20cm	200mm	4	75mm	6
8cm	200mm	4	75mm	10
5cm	50mm	3	130mm	6

IV. Description of Wiring





V. Function Description

Speed Dome Video Camera is an all-in-one high-tech monitoring product, which integrates high-definition color video camera, universal gear change pan-tilt and multi-function decoder. This product furthest reduces the processes of connection and installation between system parts and increase system reliability. Also the video camera is very easy to install and maintain, has many features, such as perfect shape, legerity and convenience, simple operation and etc.

1. Integrate multi-protocol decoder

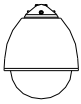
- a. Built-in decoder consists of multi-protocol and can integrate up to 4communications protocols. Communication serial baud rate is adjustable. Using the simple finger-switch inside the Dome device, the product can be compatible with domestic and foreign main systems and has very high commonality.
- b. RS485 serial control, address of Dome device is from 0~255.

2. Integrate full-view rotary PAN/TILT:

- a. Pan 0-360° unlimited continuous rotation and rotation rate can be adjusted from 0.1~36° /s and 0.1~120° /s continuously. Tilt rotation range is 0~90° and rotation rate can achieve 36° /s and 60° /s.
- b. Low-speed operation has features of stable, ultra-low miscellaneous signal and image without jitter.
- c. 180° auto-reverse realizes full-view monitoring without blind area and position precision achieves $\pm 0.1^\circ$.

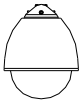
3. Intelligent power-off memory operation

- a. Provides 64 preset points (including pan-tilt position and preset points of lens focus) and information power-off memory.
- b. Support Dome device to scan between two points horizontally and the scanning speed can be changed and selected.
- c. Provide setting of scanning track and select cruise track function. Self-test can allow to store track that user edits arbitrarily and information power-off memory. (depending on user's operation keyboard or DVR function)



4. New-added functions

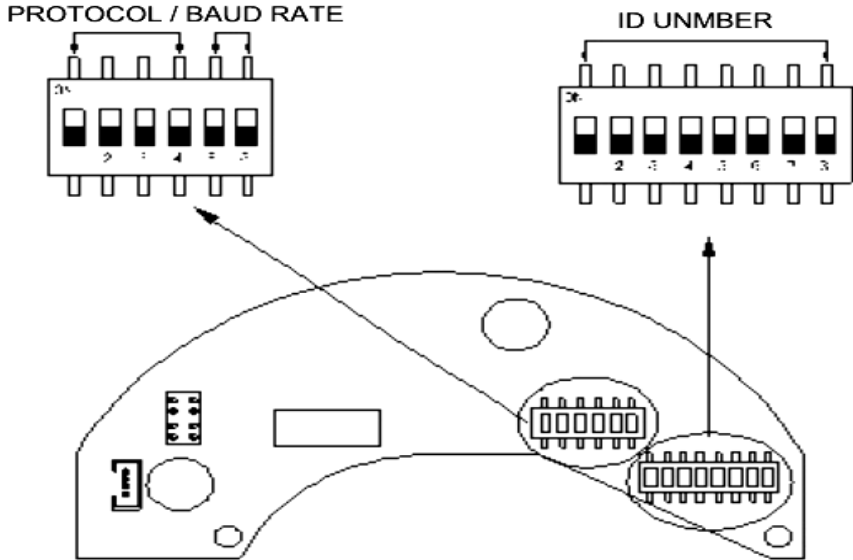
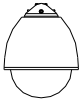
- A. **Long-focus speed-limited function:** Dome device can auto adjusts its manual control speed according the current focus length of video camera. Zoom-in of video camera becomes larger, its manual control speed becomes slower, which ensures that video camera can scan objective quickly and correctly.
- B. **Flexible and convenient to use:** Dome device interior integrates multiple communication protocols, and serial transmission rate is selectable from 2400bps to 19200bps.
- C. **Line-scanning position freely selectable:** With different setting, Dome device can scan between arbitrary two points within less than 180°, and scanning speed is adjustable continuously.
- D. **Programmable six cruise tracks:** Each track has 16 points preset position and the dwelling time and call speed upon each preset position can be set as well.
- E. **Intelligent power-off memory current setting and state:** If it was be line-scanning or running the track, while power off. Current setting and work states were be saved. It will be worked in state of before power off when power on. It dispense with setting again.
- F. **Home position:** Home function is available when it is set at **ON**, namely, the dome camera will return home position (No.1 Preset position) if user has no action in a period of time, and user can adjusts the Dwell time. The dome camera shall not return the home position if it is on scan state. If no home function is needed when the dome camera is stopped, set the option at OFF.
- G. **Intelligent manually pan continuous scanning:** when user use joystick for pan scan monitoring, by certain setting, the dome can go on with the pan scan automatically.



VI. Function Setting

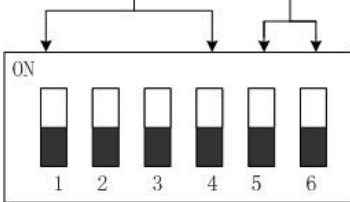
- Before Dome device is installed, please first make sure communication protocols and serial transmission rate that control host in the system adopts.

switch state Dome Address (ID Number)	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th
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
...								
255	ON	ON	ON	ON	ON	ON	ON	ON



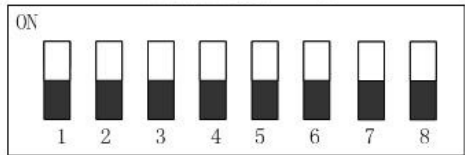
Protocol setting

Baud rate setting



PROTOCOL SELECT

Dome Address setting

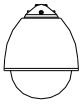


ID NUMBER

2. Address setting of Dome device (first 8 digits of SW1):

Coding Description:

- I Address of Dome device represents as binary, where ON represents “1”, OFF represents “0”.
- I Above coding only introduces 0~20 address codes, from 21 to 255 address coding may be deduced by analogy.
- I Address coding range: 0~255

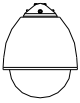


3. Protocol Coding Match-up Table

On/Off Status Protocol Type	Protocol Type				Default baud rate	
	1 st Digit	2 nd Digit	3 rd Digit	4 th Digit	5 th Digit	6 th Digit
PELCO-D	ON	ON	OFF	OFF	OFF	OFF
PELCO-P/4800	OFF	OFF	ON	OFF	OFF	ON
PELCO-P/9600					ON	OFF
Baud Rate						
2400 BPS					OFF	OFF
4800 BPS					OFF	ON
9600 BPS					ON	OFF
19200 BPS					ON	ON

4. Coding description of protocol and serial transmission rate:

When set communication protocol of Dome device (first 4 characters) and default serial transmission rate of the protocol (last 2 characters of SW2), if default baud rate of the protocol does not match with baud rate of host, please set the default baud rate of the protocol consistent with default baud rate of host according to Appendix 3. Above lists protocols that are suitable for the device. Normal operations of these protocols are compatible with domestic and foreign main systems. There into, for some special protocols, such as “PELCO-D”, “PELCO-P”, etc, some special functions has no corresponding operation command specified in these protocols. To allow user can use some special functions of the product conveniently, we switch functions of some normal commands in order to achieve the objective of controlling special functions of intelligent Dome device. Under general situation, we adopt “Call preset point/Set preset point command” to enable functions. Below, we list contents of command.



User's Manual for Speed Dome Camera

a. Match-up control method table (Function Table) is shown below:

Set No. Preset Point: First entering the press position number defined by yourself, press "SHOT" button, then press "ON" button. (**No.+ SHOT + ON**)

Call No. preset point: First entering the number of desired preset position, press "SHOT" button, then press "ACK" button. (**No.+ SHOT + ACK**)

Dele No. preset point: First entering the number of preset position, press "SHOT" button, then press "OFF" button. (**No.+ SHOT + OFF**)

b. Description of the preset point:

Position pre-set: 1-50, 64-77 (totally 64)

Function short-cut preset: 51-63, 95-101

Preset setting: Enter the preset number, press SHOT, then press ON

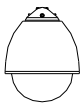
(**Preset number +SHOT+ON**) or (**PRESET+Preset number+ENTER**)

Call the preset number:

(**Preset number+SHOT+ACK**) or (**CALL+Preset number+ENTER**)

Clear the preset: **Preset number+SHOT+OFF**

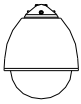
Note: Dome operation will be different due to controller's different specs.



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Function Table:

No.	Control Object	Definition of Keyboard Operation	
		CALL + No. (No.+ SHOT + ACK)	PRESET + No. (No.+SHOT+ON)
51	Pan-tilt Compensation Control	Enable line-scanning (low-speed)	Enable system default cruise track
52		Enable line-scanning (medium-speed)	Set starting point of scanning
53		Enable line-scanning (high-speed)	Set ending point of scanning
54	Video Camera Power Control	Power On	Power Off
55	Background Light Compensation *	On	Off
56	Zero Illumination	On	Off
57	Screen Display *	On	Off
58	Digital Zoom *	On	Off
59	Focus	Auto	Manual
60	Iris	Auto	Manual
61	White Balance Mode *	Auto	Manual
62		Indoor	Outdoor
63		ATW	One Push WB
100	Home position	ON	OFF
95	Dwell time setting for the Home position function	1 minute	
96		2 minutes	
97		4 minutes	
98		8 minutes	
99		10 minutes	
101	Intelligent manually pan continuous scanning	ON	

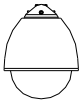


User's Manual for Speed Dome Camera

Description of special control above:

- 1、 Item with symbol “*” has memory function after Dome device powers off (refer to Functions of Video Camera)
- 2、 For video camera consisting of “**Function Table**”, among the commands listed above, “**Screen Power On/Off**” can be used to switch to **Function Table On/Off** control, use “**TELE**”, “**WIDE**”, “**NEAR**” and “**FAR**” commands for menu item selection.
- 3、 Some video cameras do not provide “**Zero Illumination**” function or “**Zero Illumination**” function is **auto switched** and it is not controlled by command. Then command “**Zero Illumination**” specified above does not make any effect.
- 4、 Description of “**cruise track**” function:
 - ① When enter “**PRESET+51+ENTER**”, the device is enabled system default cruise track. The device will auto scan point by point from No.1 preset point to No.16 preset point. If certain point has not been pre-set or been cleared after preset, “**cruise track**” will not scan these points.
 - ② Dwell time between two preset points is 2 seconds.
 - ③ About other 6 cruise tracks operation, please refer operation manual of the keyboard controller. Different controller is with different operation.
- 5、 Description of “**Line-Scanning**” function:
 - ① Dome device will auto line-scan between two specified points.
 - ② Speed of line-scanning contains 3-level. Via call No.51, No.52, and No.53 preset points, the dome can start line-scanning function by 2.5degree/sec, 5degree/sec and 15degree/sec respectively.
 - ③ Dwell time of line-scanning between “starting point” and “ending point” is 2 seconds.
6. Intelligent manually pan continuous scan:

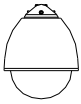
When user use joystick for pan scan monitoring, keep manually 3 seconds, then press CALL+101+ENTER , the dome can go on with the scan speed and monitor position automatically .



User's Manual for Speed Dome Camera

VII. General Failure Analysis Table

Problem Description	Possible Reason	Troubleshooting
After power on, no motion and no image.	Power supply module is damaged or power is not enough.	Change
	Power cable is connected improperly.	Correct
	Failure occurs on engineering line.	Eliminate
Self-test is exceptional, there is image but with motor noise "moo".	Mechanism failure.	Examine and repair
	Video camera is slantwise.	Put right
	Power is not enough.	Change power that meets requirements. It is recommended to place the power switch near the Dome device.
Self-test is normal, but there is no image.	Video line is connected mistakenly.	Correct
	Video line is poor contact.	Eliminate
	Video camera is damaged.	Change
Self-test is successful, but can't control.	Control signal line is connected mistakenly.	Correct
	Position of Dome device does not match.	Re-select
	Protocols are not matched.	Adjust the protocols being match with the controller. Re-power on.
Image is not stable.	Video line is poor contact.	Eliminate
	Power is not enough.	Change
Dome device is not controllable.	Self-test is exceptional.	Re-power on
	Control signal line is poor contact.	Eliminate
	Operation of Host has problem.	Re-power the host on
	Too much load or communication distance is too long.	<ol style="list-style-type: none"> 1. Confirm terminal resistance 2. Add code distributor
	Iris of the Dome device is not controllable.	Use control command to set iris to manual status and iris can be controlled.



User's Manual for Speed Dome Camera

VIII. Main Technical Indexes

Specification	Power	AC24V 2A
	Power Consumption	18VA
	Weight	3.5Kg
	Installation Method	Wall mount, pendant type, ceiling-style, etc(optional)
	Relative Temperature	10-75% (under the condition of without agglomeration)
	Operating Temperature	-10℃~40℃ (normal range)
	Basic Function of Dome	Manually Horizontal speed
Manually Vertical speed		0~36°/s, 0~60°/s
Preset speed		100° /s, 120° /s
cruise track		6
Preset Positions		64