

Outdoor Speed Dome Camera

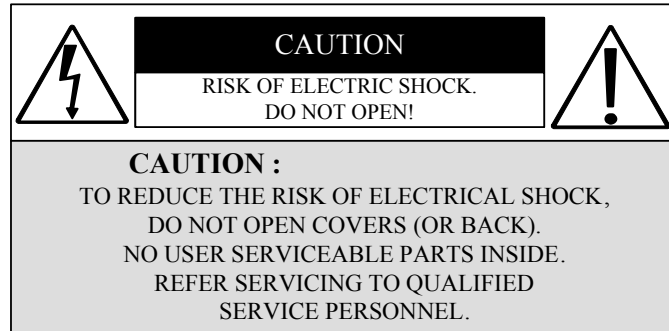
Manual

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1. Safety Precautions



It is advised to read the Safety Precaution Guide through carefully before operating the product, to prevent any possible danger.

 **WARNING:** This symbol is intended to alert the user to the presence of un-insulated “ dangerous voltage”.

 **CAUTION:** This symbol is intended to alert the user to presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance.



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Do not install the product in an environment where the humidity is high. Unless the product is waterproof or weatherproof, otherwise poor image quality may occur.

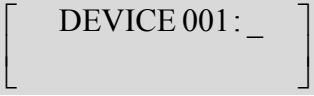
Please take extreme care when cleaning the dome surface. The plastic material that the dome is made of is, by necessity, relatively soft and prone to nicks and scratches which will impair vision through the dome.

Do not plug and unplug the power cord, it may result product malfunction.

Make sure to use only the power source specified in the specification.

Before operation, please make sure that the product has been properly installed.

2. Symbol Description

1. Function keys are shown by, framed capital boldface print letters.
Example: **ENTER**, **AUTO FOCUS**, etc.
2. Function key “+” indicates the order sequence.
Example: **2** **8** + **ENTER** meaning, press the function key “**2**”, “**8**”, and then **ENTER**.
3.  Indicate messages from the device and is shown on the control keyboard LCD display.
4. “n” indicates the ID number of the nth device (ID numbers ranges from 001~127).

3. Features

- Speedy response with 22x/ 35x continuous auto-focus zoom lens and 16x Electronic Zoom.
- Day & Night (IR Cut Filter Change Mechanism).
- Auto Iris and Manual Iris Control.
- Advanced DSP Camera, including Auto White Balance, Backlight Compensation and Auto Iris Control.
- 360° Continuous Pan Rotation.
- 80 Preset Points Setup.
- Auto pan at pre-set point.
- Pan Speed up to 300°/Sec and Tilt Speed up to 200°/Sec.
- Horizontal Rotation of 180°.
- Built in 6 Alarm Inputs and one Relay Output.
- Two types of Alarm out signal are provided: NO and NC.
- Remote Control via RS-485.
- Connects up to 127 Speed Dome Cameras.
- Supports PELCO Protocol (D and P Protocol).
- PC control software is applicable.
- AC24V or DC12V Power Input.
- Built-in heater device and fan to maintain camera in normal operating temperature.
- Installation Option: Wall Mount/ Pendant Mount/ Corner Mount
- Waterproofing Criterion: IP66.

4. Package List

DC12V TYPE

1. DC Adaptor (x1)
2. Power Line (x1)
3. Power Connector (x1)

AC24V TYPE

1. Power Connector (x1)

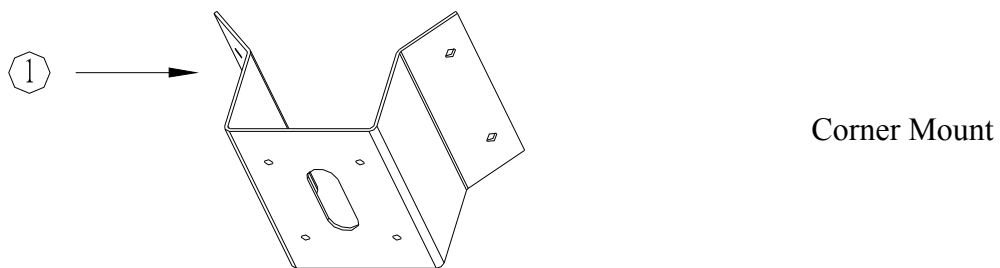
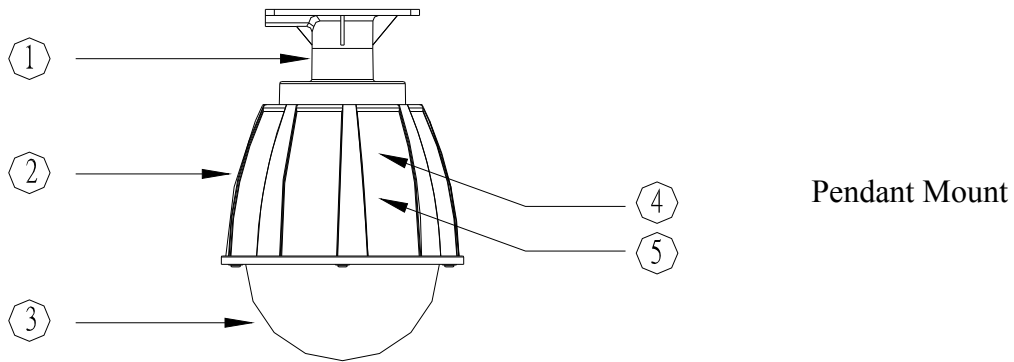
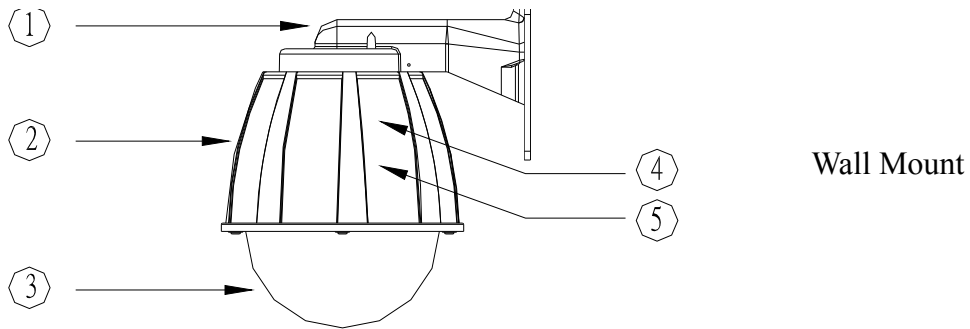
Wall Mount

1. 3mm L-Wrench (x1)
2. 4mm L-Wrench (x1)
3. M4x22 Stainless Steel Screw (x5)
4. M8 Screw + Anchor (x5)
5. M3X4 Screw (x6)
6. Wall Mount Housing (x1)
7. Manual (x1)

Pendant Mount

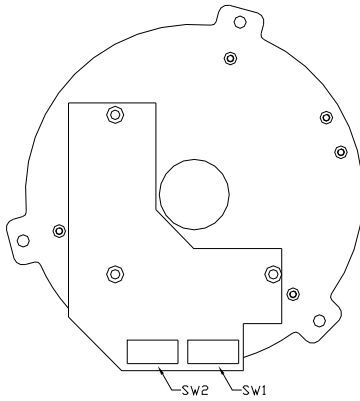
1. 3mm L-Wrench (x1)
2. 4mm L-Wrench (x1)
3. M4x22 Stainless Steel Screw (x5)
4. M8 Screw + Anchor (x5)
5. Manual (x1)

5. Component and Structure Description



- ① Wall Mount Bracket/ Pendant Mount Bracket/ Corner Mount Bracket
- ② Machine Housing
- ③ Transparent Cover
- ④ ID Number/ Protocol/ Baud Rate Setting
- ⑤ Alarm Input or Output / Video Output / Power Input Terminal

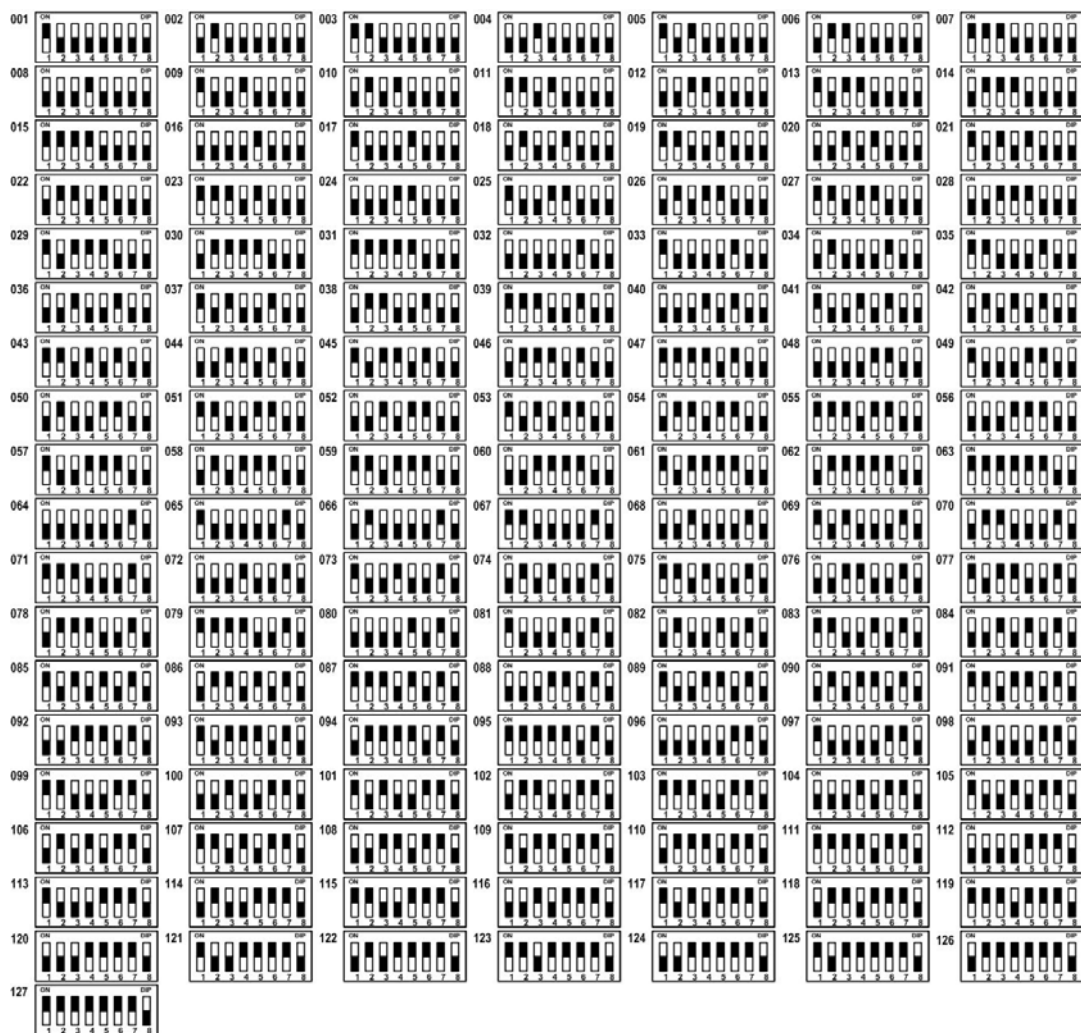
6. Camera Setting





SW1: ID Number Setting

Connection of up to 127 Speed Dome Cameras, each camera has its own ID Number.

DIP Switch setting, shown below:



- *  Setting 000, then the image display will show: DEVICE N/A.
- *  ← Does not affect setup.

SW2: Baud Rate Settings

Settings	
Switch Number #1 #2 #3 #4	Baud Rate
Off Off Off Off	9600 BPS
On Off Off Off	4800 BPS
Off On Off Off	2400 BPS
On On Off Off	19200 BPS

* BOLD: Default Settings

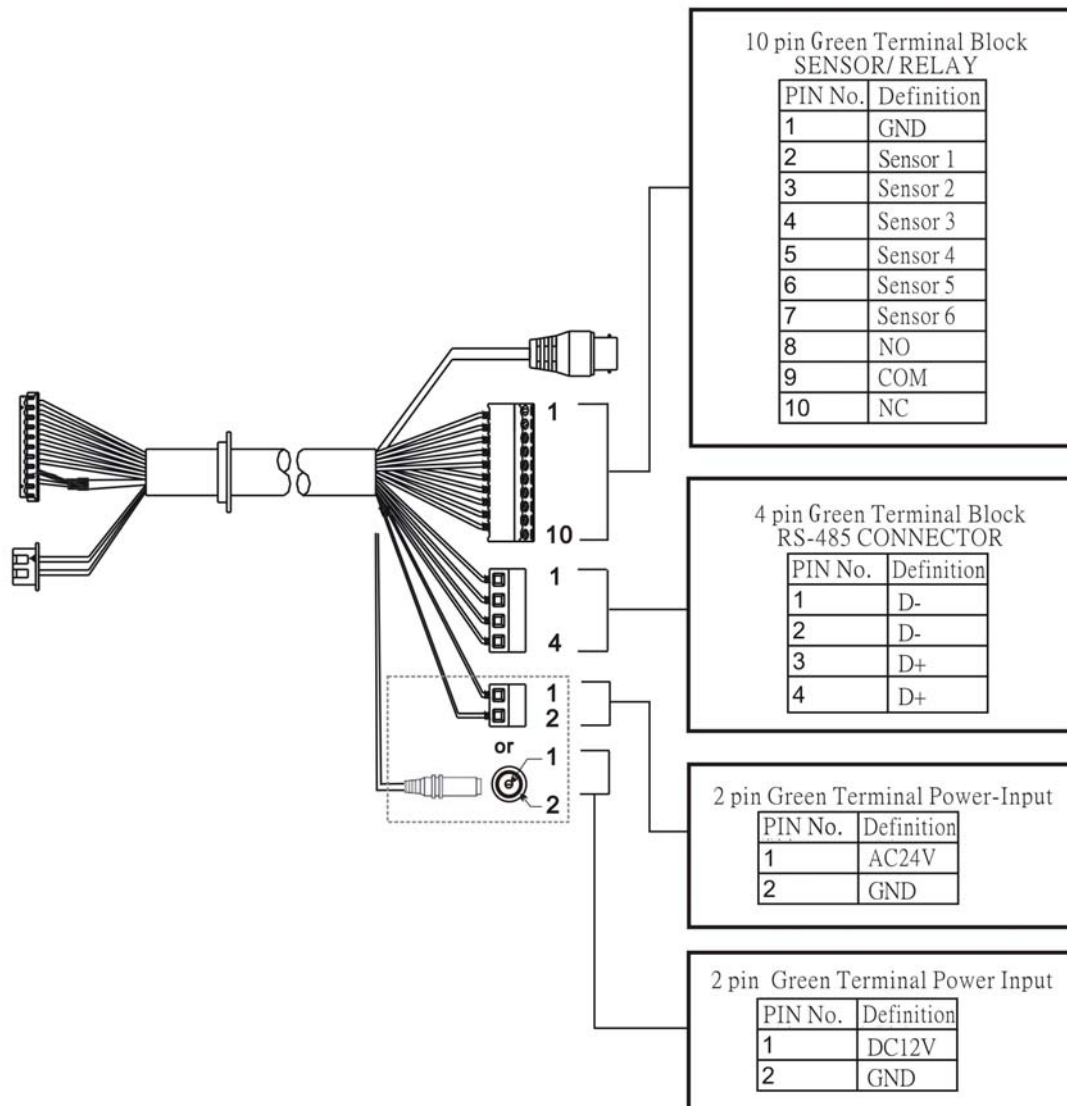
SW2: Protocol Settings

Settings	
Switch Number #5 #6 #7 #8	Protocol
Off Off Off Off	NATIVE
On Off Off Off	PELCO
Off On Off Off	Reserved
On On Off Off	Reserved

* Speed Dome automatically detects the type of PELCO Protocol. No switch settings are required to set D and P Protocols.

* BOLD: Default Settings.

Terminal base Connection, Data Line, and Signal Line Regulation



1. Power Input Terminal

DC 12V Input and power consumption of 2.5A.

AC 24V Input and power consumption of 2.2A.

Video Output Terminal

Video Signal Output: CVBS 1.0 Vp-p 75Ω BNC.

2. Alarm Input/ Output Terminal

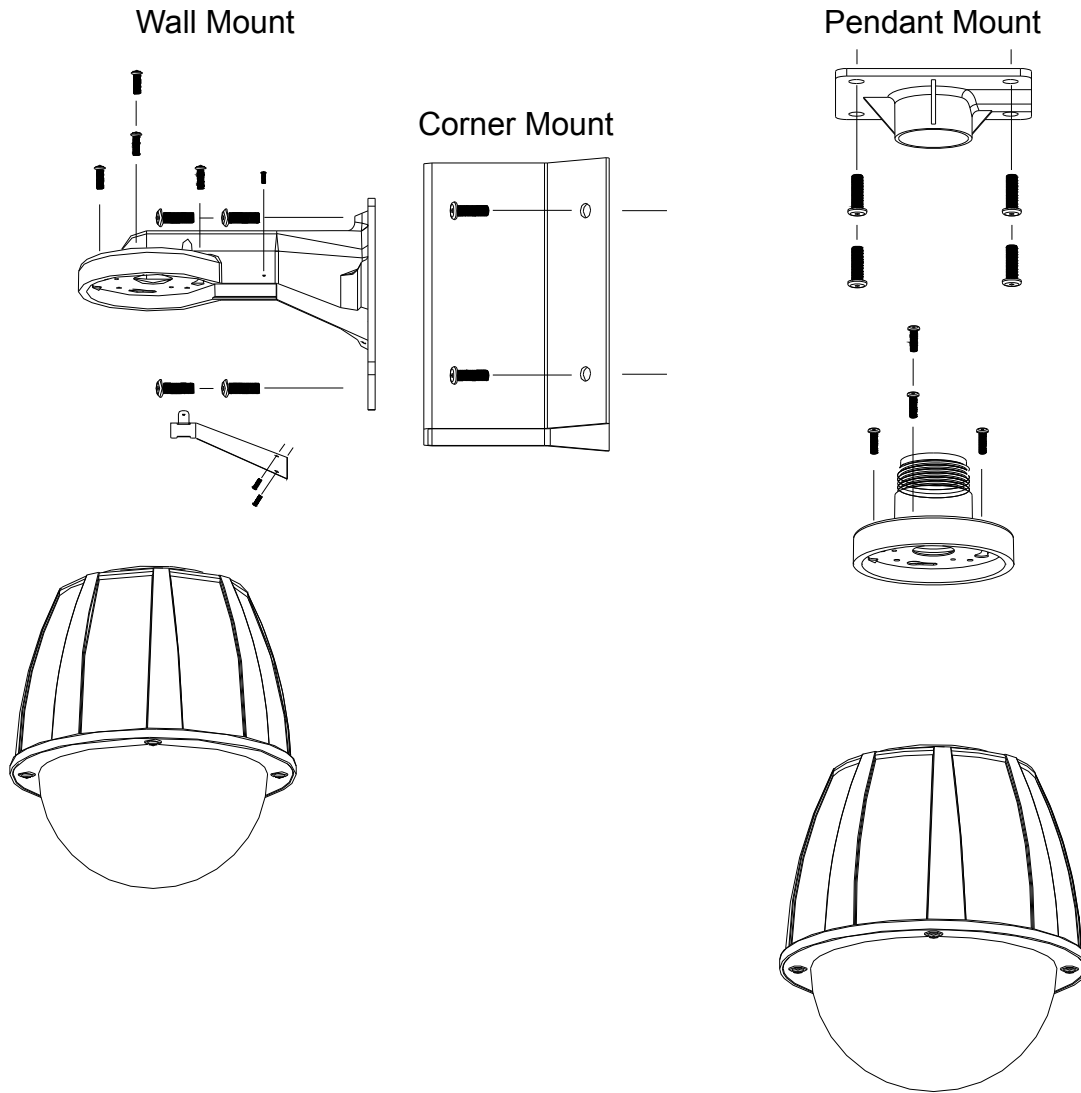
Each Speed Dome camera is equipped with 6 external alarm inputs and 2 sets of alarm outputs (1 set NO and 1 set NC). Alarm Input voltage: 5.6Vmax and Alarm Output Specification: 0.35A 120VAC/ 0.5A 24VAC.

3. Communication Control Input/ Output Terminal

RS-485 Input Terminal has two terminal points (D+, D-), using the twisted pair wire to connect onto the next Speed Dome Camera.

7. Installation

Outdoor Installation Structure Diagram (Wall and Pendant Mount)

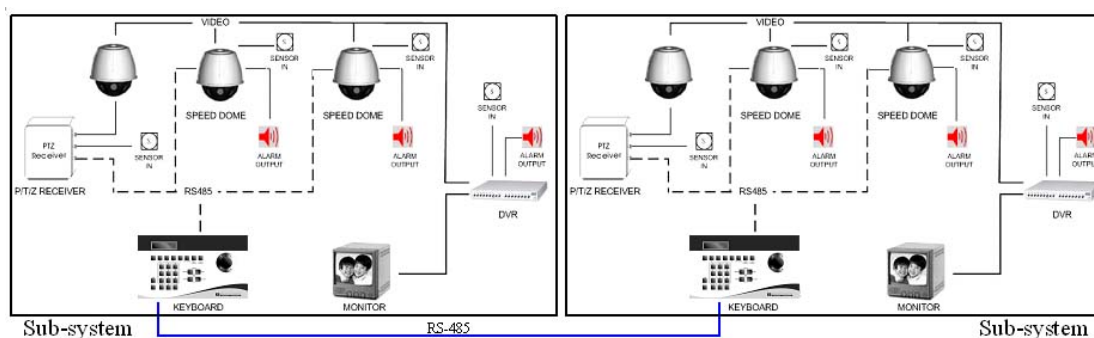


8. System Assembly

Simple to install, the system supports connection of numerous devices (Ex.: Speed Dome Camera, P/T/Z Receiver, and etc.)

Connect the double twisted cable from the keyboard to the RS-485 terminal, and video signal to the monitor, DVR or multiplexer to complete the main system connection.

Control keyboard can connect up to 32 sub-systems to form one control system. Using the main control keyboard, each system can be controlled separately.



System Connection Illustration Diagram

The system supports connections of numerous Speed Dome Cameras or P/T/Z Receivers, assigning a set of ID (Note! ID numbers ranges from 1~127 and may not be repeated) to setup and control, through control keyboard.

► Connecting the Device

Connect terminal D+ of the RS-485 from the control keyboard to terminal D+ of RS-485 DATA IN connector from the device; then connect terminal D- of the RS-485 from the keyboard (the same set of terminal) to the terminal D- of RS-485 DATA IN connector from the device.

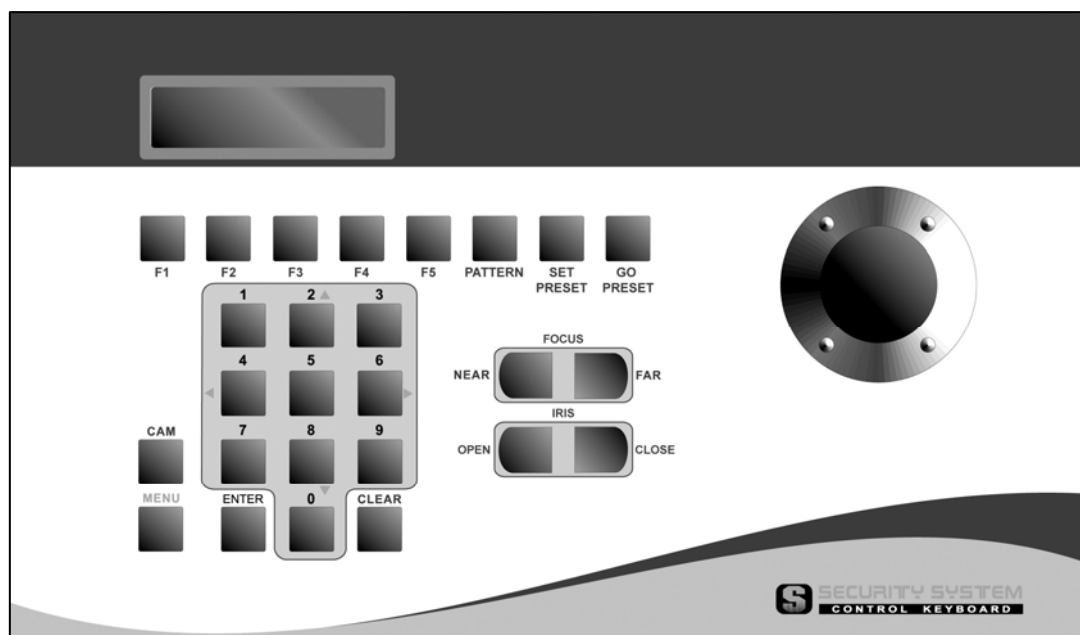
Connecting more than Two Devices

Connect terminal D+ of the RS-485 DATA OUT connector from the previous device to the terminal D+ of the RS-485 DATA IN connector from the next device; then connect terminal D- of the previous device (the same set of terminal) to the terminal D- of RS-485 DATA IN of the next device.

► Connecting the Keyboard

Connect terminal D+ of the RS-485 from one keyboard connection port to terminal D+ of RS-485 from the other keyboard connection port; then connect terminal D- of the RS-485 from the keyboard connection port (the same set of terminal) to the terminal D- of RS-485 from the other keyboard.

9. Operation



Select and switch Outdoor Speed Dome Camera

CAMERA and SWITCH DEVICE

Use numeric key + **CAM** key

Enter the desired number n camera and press **CAM** key, the speed dome selected by the user to control will appear on the LCD display:

```
[ DEVICE 001 : _ ]
```

CAMERA OPERATION and ZOOM CONTROL

The joystick may control many different devices: Speed Dome Camera, PTZ Receiver, and so on. The movement (Up/ Down/ Left/ Right) of the device depends on the angel of the joystick.

Zoom Wide / Zoom Tele

- Push the joystick clockwise, for close-up image (narrow the angle of viewing) and release the joystick to stop zooming.
- Push the joystick anti-clockwise, for far away image (widen the angle of viewing) and release the joystick to stop zooming.

Joystick Control

The movement depends on the angel of the joystick (the more you push the joystick, the faster the speed):

- Push the joystick up or down, the device will move forward or backward.
- Push the joystick left or right, the device moves leftward or rightward.

Note! Under zoom mode, the speed movement becomes slow.

FOCUS CONTROL

Press **FOCUS FAR** : focus far and release the key to stop focusing.

Press **FOCUS NEAR** : focus near and release the key to stop focusing.

PRESET POINT SETUP

The speed dome camera enables 80 preset points. Preset function is to save the address information (such as PTZ pan/tilt, focus and etc) to the memory so that you can quickly adjust the dome and PTZ to the correct position, and when necessary to view life monitoring.

Setup Steps:

- ① Select the desired speed dome camera.
- ② Use the joystick (on the control keyboard) and move the speed dome camera to the desired preset point.
- ③ Use the zoom control to adjust the monitoring display.
- ④ Enter preset number (1~32, 35~82), and press **SET PRESET** key, the LCD will display

SAVE TO PRESET XXX ?

.
- ⑤ Press **SET PRESET** key, to enable storage and press **CLEAR** key to disable storage.
- ⑥ Repeat the steps 2~5 again, to setup more preset points.

CALL PRESET POINT

Enter the assigned preset number and press **GO PRESET** key, the LCD will display:

GO PRESET : XXX

, and the speed dome camera will move to that specified preset point.

Example: 1st preset point =

1

 + **GO PRESET**
28th preset point =

2

8

 + **GO PRESET**

CHANGE PRESET POINT

To change the preset point, please follow the setup guide in the “PRESET POINT SETUP”.

PATTERN RUN

This function is designed to scan the preset points in order. Each group is allowed to set up 32 preset points for moving speed and retention time. The Auto Pan has a total of 6 setting groups, but only 4 are programmable. Group from 1~4 is allowed to set up to 32 preset points and Group 5~6 are not programmable by user (3 preset points).

The 5th and 6th group is fixed (not programmable)

* **The 5th group functions as a simple continuous rotational manner; included are 1st, 2nd, and 3rd preset points.**

* **The 6th group functions as a simple continuous rotational manner; included are 4th, 5th, and 6th preset points.**

AUTOPAN SETUP

GROUP	:001	→	Range: 1~4
INDEX	:001	→	Range: 1~32
POSITION	:12	→	Range: 80(1~33, 35~82) or ---
SPEED	:10	→	Range: 1~15 (higher the value, faster the speed)
DWELL TIME (sec)	:12	→	Range: 1~128

Setup Steps:

- ① Select a desired group number (1~4 groups).
- ② Use the joystick on the control keyboard and select the desired preset point (INDEX: 1~32).
- ③ Use the joystick on the control keyboard and change to the desired position. If you do not wish to set all 32 preset points, set “---” as the last preset point position (POSITION: 1~33, 35~82 or ---).
- ④ Use the joystick on the control keyboard and change to the desired speed level (SPEED: 1~15).
- ⑤ Use the joystick on the control keyboard and change to the desired retention time (DWELL TIME: 1~128 sec).
- ⑥ Repeat the steps 2~5 again, to setup more group preset points.
- ⑦ Press [CLOSE] button to exit Auto Pan Setup.
- ⑧ To activate a previously programmed Group Preset Function, press [GROUP No.] + [PATTERN] button.

Tip:

1. You can select from 1-32 setting points (INDEX) and decide the pan direction (POSITION), the pan speed (SPEED), and also the dwell time (DWELL TIME) for each group.
2. Group number buttons in combination with PATTERN button, is used to activate a previously programmed Group Preset Function.
3. If you do not wish to set all 32 preset points, set “---” as the last preset point.

Example: If you wish to set only 4 preset points, you must set the 5th preset point to “---”.

The system will auto pan as follow: (1, 2, 3, 4), (1, 2, 3, 4)...

❑ Start Pattern Run

Under control mode (assume device=1), when the LCD displays:

DEVICE 001 : _

, enter the desired group number to be setup (Assume group=1, then enter 1), then press **PATTERN** key, to activate pattern run mode in group number 1.

* Preset point group number may differ depending on the speed dome camera type.

❑ Stop Pattern Run

Push Joystick to any direction.

AUTO SCAN

☐ Activate Auto Scan

Under control mode (assume device=1), when the LCD displays:

DEVICE 001 : _, enter 9 9 + G0 PRESET key, the speed

dome camera will slowly precede 360° auto scan.

☐ Deactivate Auto Scan

Enter 9 6 + GO PRESET key, or push the joystick to stop auto scan.

CAMERA FUNCTION SETUP

☐ Enter Camera Setup Menu

Under control mode (assume device=1), when the LCD displays:

DEVICE 001 : _, enter F2 or 9 5 + SET PRESET

key, to enter camera setup menu..

10. MENU Operational Description

MENU TREE STRUCTURE

MAIN MENU	ITEM	SELECTION	NOTES
STATES SET UP	ID DISPLAY	ON/OFF	
	FLIP FUNCTION	ON/OFF	
	TITLE DISPLAY	ON/OFF	
	TITLE SET	xxxxxxx	Use number 0 as substitute for capital letter alphabet O
CAMERA SET UP	EXPOSURE		
	SHUTTER SPEED	000~028	
	EXPOSURE Auto		
	EXPOSURE Iris		
	Iris Level	074~179	
	EXPOSURE AGC		
	AGC Level	028~220	
	EXPOSURE Manual		
	Iris Level	074~179	
	AGC Level	028~220	
DAY/NIGHT			
D/N MODE AE			*DAY/ NIGHT display is applicable only to cameras with DAY/ NIGHT function. *Only when EXPOSURE MODE=AUTO, can D/N MODE=AE be effective. *FILTER DLY is applicable only to "AE" and "CDS" mode.
D/N MODE CDS			
CDS LEVEL	0~255		
D/N MODE DAY			
D/N MODE NIGHT			
FILTER DLY	1~15 SEC		
BACKLIGHT			
BACKLIGHT	ON/OFF		
BLC Level	0~80		
WBC MODE			
WBC MODE Auto			
WBC MODE Hue			
MWB Data	000~099		
WBC MODE Indoor			
WBC MODE Outdoor			
WBC MODE Manual			
Red Data	000~255		
Blue Data	000~255		
WBC MODE Push Auto			
Setup	ON/OFF		

MAIN MENU	ITEM	SELECTION	NOTES
IMAGE SET UP	BRIGHTNESS	000~099	
	FLICKERLESS	ON/OFF	
	SHARPNESS	000~015	
	MIRROR	ON/OFF	Applicable only to high resolution cameras
	COLOR	ON/OFF	COLOR display is applicable only to cameras without DAY/ NIGHT function.
ALARM SET UP	ALARM PIN	001~006	Alarm Serial Number
	ALARM SWITCH	ON/OFF	Alarm Switch
	ALARM TYPE	GPO/RAP	Execution Mode after Alarm GPO: GO POSITION RAP: RUN AUTOPAN
	AUTOPAN GROUP	001~004	
	PRESET POSITION	1~32, 35~82	Preset Point Serial Number
	DWELL TIME (sec)	001~128	Alarm retention period; retention --- meaning forever halt.
HOME SET UP	HOME FUNCTION	ON/OFF	Homing Function
	PRESET POSITION	1~32, 35~82	Select Homing Point
	RETURN TIME (min)	001~030	Homing Time, start counting from the instant when the device stopped moving.
AUTOPAN SET UP	AUTOPAN GROUP	001~004	AUTOPAN 005 - 006 as simple manner, it does not need setup.
	AUTOPAN INDEX	001~032	
	PRESET POSITION	1~32, 35~82	Notation --- meaning to ignore the points after AUTOPAN POINT
	AUTOPAN SPEED	001~015	Speed to the next point: 001=Slowest and 015=Fastest
	DWELL TIME (sec)	001~128	
LOAD DEFAULT			Press ENTER key, to display Load default and press it again to confirm.

11. Quick Reference Table

Functions		Method of Operation
P/T/Z Control	Upward Rotation (upward image monitoring)	Push the Joystick Forward
	Downward Rotation (downward image monitoring)	Push the Joystick Backward
	Leftward Rotation (leftward image monitoring)	Push the Joystick Leftward
	Rightward Rotation (rightward image monitoring)	Push the Joystick Rightward
	Zoom Tele	Push the Joystick Clockwise
	Zoom Wide	Push the Joystick Counterclockwise
Select device		No. Key+ CAM
Manual Operation Focus Far		FOCUS FAR
Manual Operation focus Near		FOCUS NEAR
Iris Control to Bright		IRIS OPEN
Iris Control to Dark		IRIS CLOSE
Preset Point Setup		Enter Preset No. (1~32, 35~82) Press Key: SET PRESET
Call Preset Point		Enter Preset No. (1~32, 35~82) Press Key: GO PRESET
Start Pattern Run Mode		Enter Group No. (1~6) Press Key: PATTERN
Stop Pattern Run Mode		Push Joystick to any direction
Start Preset Mode		Enter 99 Press Key: GO PRESET
Stop Preset Mode		Push Joystick to any direction
Enter Camera Menu Selection Mode		Press Key: F2 or Enter 95 Press Key: SET PRESET

12. Quick Reference Table

KEYBOARD MENU SETUP

Functions	Method of Operation
Enter Main Menu	MENU
Cursor Up	↑
Cursor Down	↓
Menu Enter	ENTER
Menu Exit	ENTER
Decrease (-)	←
Increase (+)	→
Exit Main Menu	MENU

MENU SETUP MODE

Functions	Method of Operation
Cursor Up	Push the Joystick Forward FOCUS NEAR
Cursor Down	Push the Joystick Backward FOCUS FAR
Menu Enter	IRIS OPEN
Menu Exit	IRIS CLOSE
Decrease (-)	Push the Joystick to the Left
Increase (+)	Push the Joystick to the Right

13. Troubleshooting

1. Speed Dome Camera switched OFF
 - Check whether the power supply is DC12V or AC24V.
 - Check whether the fuse has been burned.
 - Check whether the 20PIN of the camera foot or the 2PIN of the power line has fallen off.
2. No video image on the monitor
 - Check whether the video signal line of the Speed Dome Camera is connected properly.
 - Check whether video signal has been disconnected.
 - Check whether the video signal line of the monitor is connected properly.
 - Check whether the 20PIN of the camera foot or the 20PIN of the connection line has fallen off.
3. Unable to control the Speed Dome Camera
 - Check whether the ID position is correct.
 - Check whether the communication control output or input terminal RS-485 In / Out JACK of the Speed Dome Camera and the control wire are properly connected.
 - Check whether the communication control terminal RS-485 JACK and control wire is properly connected.
 - Please disable Auto Pan Function.
 - Check whether the Speed Dome Camera is in the act of processing the alarm due to alarm interchange action. For this eliminates all functions.
4. Speed Dome Camera Out of Focus

Please wipe with cotton-cloth when there are dusts on the transparent cover or on the Speed Dome Camera Housing.

Please contact your local dealer for any other problems unmentioned above.

14. Specifications

Manual Horizontal Rotation Speed Operation	1° ~ 150° Per Sec.
Manual Vertical Rotation Speed Operation	1° ~ 100° Per Sec.
Manual Call on Preset Points Horizontal Rotation Speed	1° ~ 300° Per Sec.
Manual Call on Preset Points Vertical Rotation Speed	1° ~ 200° Per Sec.
Preset Points Retention Period	0 ~ 128 Sec.
Horizontal Rotation of 180° single bond	300° Per Sec.
Horizontal Rotational Angle	360° Rotation
Vertical Rotational Angle	0° ~ 90°
Precision Degree: Horizontal/ Vertical	± 0.25°
Preset Points	80 (1~32, 35~82) Preset Points
Group setup	6 Groups
ID position setup	1 ~ 127

Camera

Sensor Type	1/4" CCD Image Sensor
Scanning System	2 : 1 Interlace
Total Pixels	<u>HR, HR-EX (ICR)</u> 811(H) X 508(V); 410k (NTSC) 795(H) X 596(V); 470k (PAL) <u>NR (ICR)</u> 537(H) X 505(V); 270k (NTSC) 537(H) X 597(V); 320k (PAL)
Effective Pixels	<u>HR, HR-EX (ICR)</u> 768(H) X 494(V); 380k (NTSC) 752(H) X 582(V); 440k (PAL) <u>NR (ICR)</u> 510(H) X 492(V); 250k (NTSC) 500(H) X 582(V); 290k (PAL)
Horizontal Resolution	<u>HR, HR-EX (ICR)</u> 470(NTSC) TVL, 470(PAL) TVL <u>NR (ICR)</u> 330(NTSC) TVL, 330(PAL) TVL

Minimum Illumination

22X NR

Normal Mode: 0.1 Lux@F1.6

22X HR

Normal Mode: 0.2 Lux@F1.6

22X NR (ICR)

Normal Mode: 0.08 Lux@F1.6

Night Mode: 0.03 Lux@F1.6

22X HR-EX (ICR)

Normal Mode: 0.12 Lux@F1.6

Night Mode: 0.05 Lux@F1.6

35X HR-EX (ICR)

Normal Mode: 0.12 Lux@F1.6

Night Mode: 0.05Lux@F1.6

S/N Ratio

More than 48dB

Synchronization

Internal Synchronization

Video Output

Composite: 1.0 Vpp / 75Ω, BNC

22X optical zoom:

Focal Distance

f = 3.9 ~ 85.8 mm (±5%)

Iris

F1.6 ~ 3.7 (±5%)

35X optical zoom:

Focal Distance

f = 3.6 ~ 126 mm (±5%)

Iris

F1.6 ~ 4.2 (±5%)

Focus Mode

Auto/ Manual/ Push Auto

Iris Control

Auto/ Manual

Gain Control

Auto/ Manual

Digital Zoom

Manual

Electrical

DC Power Supply

100VAC ~ 240VAC
(DC12V TYPE)

Power Input

DC12V/ 2.5A or AC24V/ 2.2A

Power Consumption

27W@DC12V or

31W@AC24V by power type

Heater

External Temp. 180°/0.8A±30%

Temperature Switch

ON:<15°C±4°C OFF:>25°C±3°C

Controller Interface

RS-485

Alarm Input

6 Alarm Inputs

Alarm Output

1Set NC (Normal close)

1Set NO (Normal open)

0.35A 120Vac/ 0.5A 24Vdc

Alarm Output Mode

Lock onto the last Alarm Input

Environment

Operating Temperature

-10°C ~ 50°C

Relative Humidity

0% ~ 90%

Mechanism

Type:

Wall Mount

Pendant Mount

Height:

280mm

315mm

Diameter:

φ 220mm

φ 220mm

Weight (Standard):

3.4Kg

3.2Kg