

Intelligent PTZ Speed Dome Camera

User Manual

2014 version 2

Safety Precautions

1. Technical skill needed for installer and serviceman

- 1) with qualification certificates in CCTV installation skills
- 2) with certificate for work in high above ground
- 3) Basic acknowledgement and skills for electronic circuits
- 4) Understand and familiar with the product specification

2. Lifting appliance requirements:

- 1) Installing to right place through correct lifting device.
- 2) Lifting appliance can reach to the high place where will installed camera
- 3) Lifting appliance are safety and reliable.

Precautions

1. Be careful of transportation

During transportation or storing, prevent camera from heavy goods, violent vibration or soaking .
Our product packed and shipping separately, all the return products should packed separately,
or we will not maintain it.

2. If camera break down

If the Camera not work , and with smoke come out, please cut off the power supply and contact your supplier
for help.

3. Do not disassemble or change internal structure

Do not disassemble the dome camera, it will be dangerous. If you need internal setup or maintenance, contact
the manufacturer for help.

4. Do not put any other items into the dome camera

Please confirm no combustible items in the camera. If water or liquid flow into the camera, please cut off the
power supply and contact your supplier to solve problems . Protect the camera from rain or other corrosive
liquid.

5. Handle with care

To avoid damage, prevent camera from violent shaking

6. Installation place should away from electric or magnet field.

The TV set, wireless transmitter , transformer or speaker will have influence to the image of camera

7. Avoid moisture and dust

To protect the camera, please install it away from the fume and vapor

8. Away from high temperature

The camera should stay away from high temperature objects, such as projector lamp. Do not install camera at
the places which expose to the sunlight.

Content

1. Product Overview

- 1.1 Product description
- 1.2 Technical Parameters
- 1.3 Function Introduction

2. Installation Instruction

- 2.1 Installation Preparation
 - 2.1.1 Basic Requirements
 - 2.1.2 Check installation space and structure of installation site
 - 2.1.3 Length of Power line and transmission range
 - 2.1.4 RS-485Control cable and transmission range
 - 2.1.5 Video cable transmission range and the diagram of cable
- 2.2 Speed Dome System Diagram

3. Dome Basic Operation

4. Dome Address Setting

Appendix I Lightning and Surge protection

Appendix II RS-485 Bus

- 1. Basic characters of RS-485 Bus
- 2. Connection Diagram and End Resistance

Appendix III The Camera Glass Clean

Appendix IV Simple Trouble shooting Table

1. Product Overview

1.1 Product Description

This intelligence PTZ dome with high performance DSP, and vari-focal lens. This PTZ Dome camera support 360° PTZ function and Digital recorder function, Its quick location and tracking scanning features make the All direction and no blind spot surveillance come true. It can identify the light condition and target distance, Reliable system and easy for installation. Use the stepper motor device,, working stable and quick response..This product with power off memory function, auto self check when it power on again. This will be very safety.

1.2 Technical Parameters

Power Supply	DC12V ±20%
Working Temperature	Indoor: (0~+40 °C) Outdoor: (-40 °C~+60 °C)
Environment Humidity	≤95% non condensing
Power Consumption	≤25W
Password Protection	Support
Dome ID	Support
Azimuth Information Display	Support
Communication	RS-485 Bus Control
Communication Protocol	Auto Identify (Pelco-P/D protocol)
Baud Rate	2400/4800/9600/19200bps
Dome ID	Address :001~255
Horizontal Rotation Speed	High speed: 160°/S Mid. Speed : 40°/S
Horizontal Rotation Range	360°
Vertical Rotation Speed	High speed: 120°/S Mid. Speed : 30°/S
Prone and Scope	90°
Auto Reverse	2 level (Horizontal :180° Vertical : 90°)
Proportional Speed change	support
IR LED Control	Auto/Manual/ or through keyboard
IR light	Constant Current Light Adjust
Power On	Recovery
Power Fail Recovery	Save the PTZ Setting and Command
Left & Right Range	0°~90° adjustable
LR SCAN SPEED	Level 01~64
Tour Groups	4 groups (16 presets selectable, and stay time adjustable)

Presets	Support 255 presets
Home Action	Preset /LR Scan /Tour Scan /Pattern Scan/ None
Parking Time	15sec. 、 20sec.、 40 sec. 、 60 sec. Adjustable
PATTERN SCAN	1 Group (1000 movements , Longest time reach to 8 minutes)
Module	SAFER Brand Module
Data Reduction	Factory Reset/Preset Reset
Zero Point Adjust	Manual /Auto
Protection Grade	OutDoor Dome : IP66, TVS Instantaneous Voltage 6KV, Anti-thunder、 Anti surge, Vandal proof

1.3 Function introduction

Focus Control Function

During the focus progress, the camera will select one target to do focus on. This step will keep the image very clear.

Under special situation, the camera need manual focus .such as below situation:

- 1).Target not in the middle of image
- 2).Two targets near or far to the camera lens, can not get clear image.
- 3).Target with highlight. Such as Neon lamp, spot lamp.
- 4).Target on the surface of glass, which covered with dust or water.
- 5).Target move too fast
- 6).Large area of target such as the wall.
- 7).target is dark or fuzzy.

BACKLIGHT COMPENSATION

If the Camera installed under the high light situation, it will auto focus on the dark target and make backlight compensation. The image effect will be better.

Proportional variable speed function

The horizontal or vertical speed will change coincident with Zoom times.

Power cut memory function

If the power cut off, the data information will be saved. When the PTZ camera power on, it will recover the action (Tour Scan, LR Scan, Pattern Scan and presets).

PRESET FUNCTION

Setting the PTZ location to the presets, and call the presets, the camera will move to the preset direction.

TOUR SCAN

The Dome camera will tour scanning according to the order of presets

PATTERN SCAN

The dome can save the PTZ control action . if you running the the pattern scan, the PTZ dome will running the action you saved.

LR SCAN

If you set the Left point and Right point of dome camera,it will scan between these two points, and keep in the same speed. If the Left point & Right point are the same, the camera will running 360° horizontal rotation.

HOME ACTION

If the camera without action for a long time (preset),the camera will running the home action((LR Scan,Pattern

Scan, Tour Scan or running Presets) .

HORIZONTAL ROTATION

When use the manual tracking function, if target beyond top point range, the dome camera will running horizontal rotation 180° and then tracking the target.

2. Installation Instruction

2.1 Preparation

2.1.1 Basic Requirements

All electrical work must comply with the latest electrical codes, fire codes and regulations. According to packing list, please confirm if all accessories are contained. Check to confirm the location of the machine and installation applications whether the required match. If not, please contact your supplier.

2.1.2 Check The Space and Structure of Installation Site

Confirm the space is enough for the camera and other components. Pay attention to the carrying capability of ceiling, wall and bracket, it must support the total weight of Speed dome and other structure components。4 level safety factor.

2.1.3 AC24Vpower line and transmission range

The power voltages will loss during the transmission. Longer distance have more voltage losses. To avoid the voltage shortage problem, please refer to below list to meet the requirements of diagram of cable, and distance of transmission.

Sectional area of cable	0.5mm ² (20#)	1.0mm ² (18#)	1.5mm ² (16#)	2.5mm ² (14#)
Distance	11m(37ft)	18m(60ft)	29m(95ft)	46m(152ft)

Eg.: the distance between dome camera and power supply is 35 meters, must use the copper core cable with 2.5mm² sectional area. Otherwise, the power supply will be shortage

Note : If use DC12V power supply, the distance between PTZ camera and power adaptor within 3 meters

2.1.4 RS-485Control and transmission range

When use the 0.56mm(24AWG)twisted pair cable as transmission cable,the transmission range will differ for the baud rate

Baud Rate	Max Transmission Distance
2400Bps	1800m
4800Bps	1200m
9600Bps	800m

If you use thinner cables, the signal will be weak and will be affected. The transmission range also affected by the quantity of devices which connect to the RS 485 Bus connection

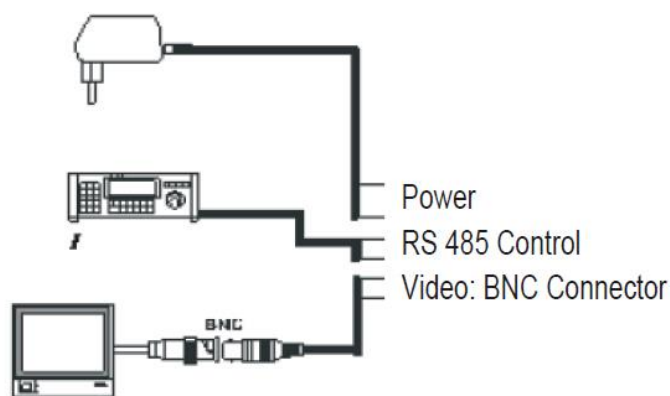
2.1.5 Video Cable transmission range

The video signals will loss during the transmission. The longer cable will have more video losses, higher signal frequency. Below is the common used cable type and the transmission range for reference:

Video cable signal	Transmit range	Video cable signal	Transmit range
75-2	150m	75-5	370m
75-3	200m	75-7	500m
75-4	270m	75-9	680m

2.2 Wiring Diagram

Before installation, please cut all the power supply of camera, and read user manual carefully.



3. Basic Operation

The operation approach will be different from the different operation platform. Please refer to the User Guide for common operation, For special function, please contact supplier for the detailed information. Here we introduce the common use of PTZ keyboard.

3.1 Power-on self-check

If the camera power on, it will enter into self-check. The dome camera will horizontal or vertical rotate, and then Zoom in and zoom out automatically.

3.2 Control the rotation of camera

Select one camera, move the joystick to control the camera upward or downward, etc.. Move the joystick to the right, the camera will running to the right direction.

3.3 Preset setup

According to the following steps to set the presets:

3.3.1 Move the joystick to adjust Camera image through the Zoom ,Focus and Iris function..

3.3.2 Input the number + **PRESET**, save the data of this preset.

3.4 Selecting the preset

Call the Presets according to below steps:

Input number+. **CALL**, the dome camera will turn to this location. And the Lens data and focus function will change to the related settings.

Special Preset list:

User call	Call preset 10 two times	Function
0~60 preset		General Preset
61+CALL	1+CALL	Run cruise scanning 1 (1~16 Preset)
62+CALL	2+CALL	Run cruise scanning 2 (17~32 Preset)
63+CALL	3+CALL	Run cruise scanning 3 (33~48 Preset)
64+CALL	4+CALL	Run cruise scanning 4 (48~60 Preset)
65+CALL	5+CALL	Set the preset time is 8 seconds
66+CALL	6+CALL	Set the preset time is 20 seconds
67+CALL	7+CALL	Set the preset time is 60 seconds
68+CALL	8+CALL	Set the preset time is 5 seconds

71+CALL	9+CALL	Set the left limited position (LR Scan)
72+CALL	11+CALL	Set the right limited position (LR Scan)
73+CALL	12+CALL	Set LR scanning speed as grade 4
74+CALL	13+CALL	Set LR scanning speed as grade 10
75+CALL	14+CALL	Set LR scanning speed as grade 15
76+CALL	15+CALL	Delect LR scanning (LR=Left to right)
99+CALL	16+CALL	Call LR scanning
90+CALL	17+CALL	Record pattern scanning
91+CALL	IRISOPEN	Stop recording
92+CALL	18+CALL	Delect pattern scanning
96+CALL	19+CALL	Run pattern scanning
93+CALL	20+CALL	Factory default
94+CALL	21+CALL	ON/OFF dome information
95+CALL	22+CALL	Open Camera Menu
97+CALL	23+CALL	Delect all presets
98+CALL	24+CALL	Set IR mode (Auto、 on、 off)
101+CALL	26+CALL	Set sensitivity as 200
102+CALL	27+CALL	Set sensitivity as 300
103+CALL	28+CALL	Set sensitivity as 400
104+CALL	29+CALL	Set IR mode as "Auto"
105+CALL	30+CALL	Set IR mode as "On"
106+CALL	31+CALL	Set IR mode as "Off"
107+CALL	32+CALL	Set idle as 15 seconds
108+CALL	33+CALL	Set idle as 20 seconds
109+CALL	34+CALL	Set idle as 40 seconds
110+CALL	35+CALL	Set idle as 60 seconds
111+CALL	36+CALL	Close idle action
112+CALL	37+CALL	Set idle action as preset 1
113+CALL	38+CALL	Set idle action as preset 8
114+CALL	39+CALL	Set idle action as cruise scanning 1
115+CALL	40+CALL	Set idle action as cruise scanning 2
116+CALL	41+CALL	Set idle action as cruise scanning 3
117+CALL	42+CALL	Set idle action as cruise scanning 4
118+CALL	43+CALL	Set idle action as LR scanning
119+CALL	44+CALL	Set idle action as pattern scanning
120+CALL		Title ON/OFF
121+CALL		PTZ Display ON/OFF

4. Dome Switch Setting

4.1 Address setting

	Address Codes Table
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Address	1	2	3	4	5	6	7	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
⋮								
250	OFF	ON	OFF	ON	ON	ON	ON	ON
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

4.2 Protocol setting

Protocol	Protocol setting			
	1	2	3	4
Pelco_P	OFF	OFF		
Pelco_D	ON	OFF		
NC	OFF	ON		
NC	ON	ON		

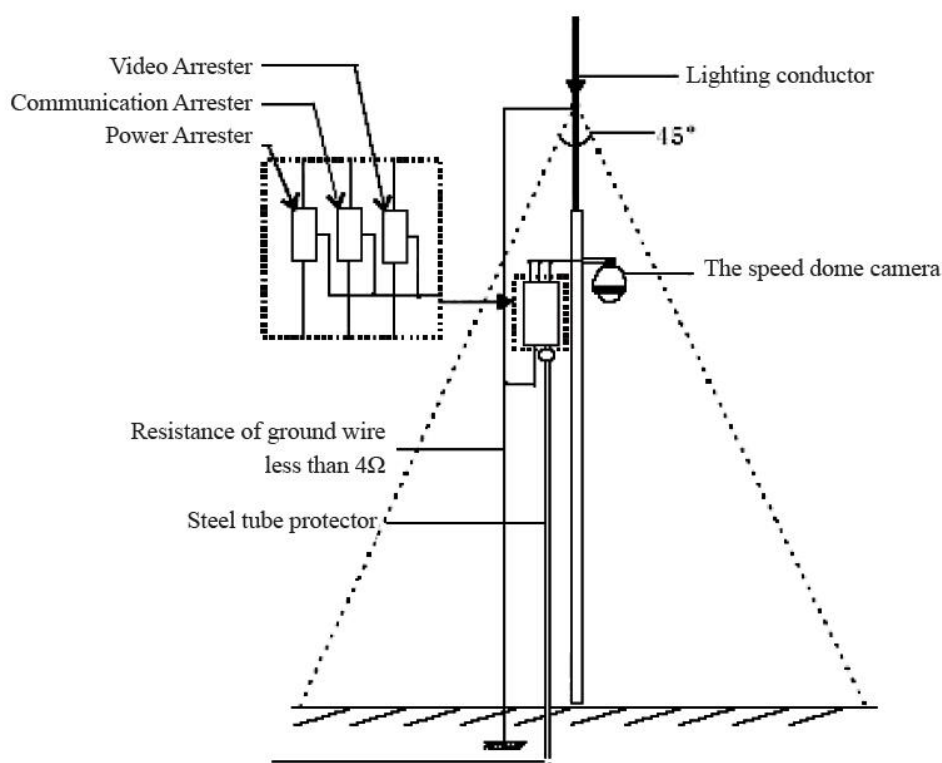
4.3 Baudrate setting

Baudrate	Baudrate setting			
	1	2	3	4
2400BPS			OFF	OFF
4800BPS			ON	OFF
9600BPS			OFF	ON
19200BPS			ON	ON

Appendix 1 Prevent Lighting stroke and Surging

This product use the Air Discharge tube and lightning protection technology. It can effectively prevent the 1500W instant lightning, surge and other types of pause signal damage. However, outdoor installation must according to the actual situation. Ensuring electrical safety under the premise of take the necessary protection measures
Signal transmission line must keep a distance from High Voltage equipment or High-voltage cables.(at least 50 meters)

- Outdoor wiring must be under eaves.;
- For the open area must be sealed tube buried way wiring, and steel single point ground, the absolute prohibition of use of overhead wiring methods;
- in strong thunderstorm or high induced voltage areas (such as high-voltage substation), you must take extra strong lightning protection equipment and lightning rods and other measures
- For outdoor device and line, lightning protection and grounding design must consider incorporate protection requirement and comply with the relevant national and industry standards;
- The system must be equipotential grounding. Grounding device must meet the without interference and electrical safety. And shall not connect high voltage electricity lines or short circuited lines. System individually grounded, anti-ground resistance of less than 4Ω , grounding wire cross-sectional area must not be less than 25 mm^2 ;



Appendix 2 RS485 bus cable

1. RS485 bus cable features

According to RS485 industrial standard, RS485 bus cable belongs to 120Ω characteristic impedance half-duplex communication cable. Max load capacity is 32 effective load(including main control equipment and manipulated equipment)

2. RS485 bus cable transmitting distance

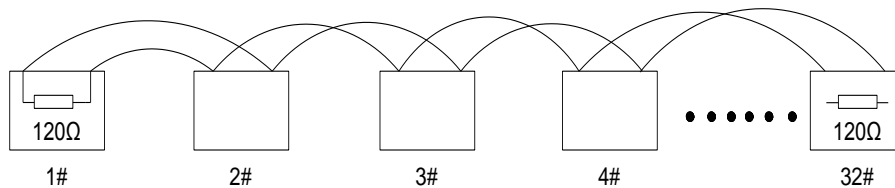
Using 0.56mm (24AWG) twisted-pair as the communication cable, according to different baud rate, max distance data is as follows,

Baud rate	Max distance
2400Bps	1800M
4800Bps	1200M
9600Bps	800M

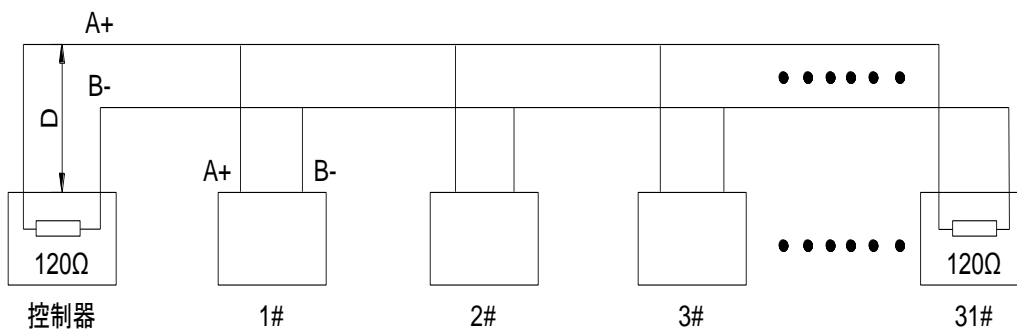
3. Connection method and terminal resistance

According to RS485 industrial standard, it require each equipments connected by the following connection ways.

The two ends must be with 120Ω terminal resistance (picture a). Simple connection is as picture b, but "D" section distance is max 7 meters.



Picture a



Picture b

Picture b, JP is RS485 bus cable 120Ω terminal resistance jumper. To avoid 485 signal reflex, connect 120Ω terminal resistance at the end the 485 bus cable. The middle equipments must disconnect terminal resistance.

Appendix III Cleaning of front glass

To have a high definition video image, please clean up the front glass of Camera.

1. Move the camera housing.do not touch the shield by your fingers, sweat will corrode the housing.
2. Please use the soft cloth to clean inside and outside surface of camera housing
3. If the dusts difficult to clean, you can try to use Neutral detergent,

Appendix IV Simple Troubles Shootings

Trouble	Probable Cause	Solution
Power-on ,the machine no action, no image, and signal light not turn on	Power supply not enough	Test with Multimeter , and use the propriety power voltage
	Wrong connection of Power ling	Correct it
	Local power supply or transformer damaged	Check the power supply, if the power adaptor work
	Power adaptor damaged	Eliminate
Self-Checked, display image but can not control	The Dome ID or Baudrate incorrect	Reset it
	Protocols not correct	Correct
	Wiring loose	Check the RS 485 connection
	RS485 wrong connection or open circuit	Check RS 485 connection
Self-Check abnormal, motor purring, with image	Mechanical breakdown	maintenance
	Camera incline	Adjust
	Power is not enough	Change to better one
Fuzzy Image	Manual Focus mode	Set to Auto Focus mode
	Camera Shade with dust	Clean it
Instability image	Video line wrong connection	Check the video line
	Power supply not enough	Change
PTZ Dome out of control	Power supply not enough	Change to a better supply
	RS485 control bad contact	Reconnect the RS485 line
	RS485 line broken	Change another line
	Many PTZ Domes connected in parallel	Add RS485 Distributor
	Long distance between Host and PTZ dome	Add distributor