

**CCTV
SYSTEMS**

**Integrated High Speed
Dome Camera**

User manual

Please read the installation instructions before you operate it.

User instructions

Thank you for using our INTELLIGENT SPEED DOME CAMERA

According to our introduction of guarantee, Within the specified warranty period, our company will repair or replace parts that are damaged under normal use. User don't disassemble repair itself without Our Consent. Within the specified warranty period, we will repair or replace parts (excluding cable, housing and bracket) that are damaged under normal use (by judge of us) at no additional charge.

Free services and repairs will not be covered under the following conditions:

1. Unauthorized repair or disassembly of the product
2. Damage due to the bad shipping, or Move of discharging
3. Damage due to the user not according to the user manual to operate, maintain, maintenance, such as falling, extrusion, flooding water, be affected with damp, corrosion and Other damage caused by human factor;
4. The product faulty caused by the overloaded or the working environment which is not suitable for it, and surface damaged when your using it
5. Any damage or ruin by force majeure

Friendly suggestion: in order to realize the whole function of our products, Compatibility tests must be conducted before using a third-party product In the system

Product feature

1. 9" elegant appearance, housing rotates follow the camera lens, IR light will not be hid by the cover., set the Add Code & Baud Rate, no need to open the PTZ housing, more convenient
2. Drove by bearing and belt, more stable and smooth, long performance life
3. Using import belt drive, Running more stable, more reliable and noiseless
4. Using import stepper motor, responsive, fixed position accurately.
5. 12 PCS imported SEL super brightness Array IR LED, effective night vision distance is 120 m
6. Different angles of infrared right according to the changes of the lens

change times lead to visual Angle on or off in stages, make the IR light illuminate Angle and lens viewing angles consistent, effectively solve the ordinary infrared machine due to the small Angle change times high power IR light in the visual Angle when open comes to the lens "flashlight" phenomenon, and make the irradiation Angle difference from the viewing Angle of current camera for the IR light producing periodic rest, reduce the infrared lamp panel working current, effectively control components of dark current and calorific value, greatly improved the integration of cameras work environment. Really improve the machine service life and stability.

7. Decoder board supply power to motor, camera and IR LED separately, machine can works more stable.

8. Using conducting ring, realize continuously rotate for 360° and avoid the wires twist together.

9. 128 preset positions; 8 tour routes, 1 fixed monitoring position, can set stay time for each preset positions as 2 / 4 / 6 / 8 / 10 seconds, can set limitation positions on left and right, internal data will not lost after power off.

Angle speed:

IR high speed dome: horizontal 360° Rotation 220° / sec, grade 4 horizontal scanning speed are adjustable: vertical +3—90° rotation. 150° / sec

IR medium speed dome: horizontal 360° Rotation. 40° / sec, grade 4 horizontal scanning speed are adjustable: vertical +3—90° rotation. 30° / sec

Main technical parameters

1. Electricity

Power supply: DC12V-- (4A)

PTZ drive: DC12V--/0.5A

IR light power supply: DC12V-- (1.8A)

lens Drive: DC12V/200mA

Camera power supply: DC12V/500mA

Retrofitting Temperature controlling device

Working temperature: -5℃--+69℃

Address range: 0~255

Communication mode: RS485

Protocol: support various protocol

Baud rate: 2400bps、4800bps、9600bps、19200bps Adjustable

Controlling Equipment: Video Matrix、industrial control DVR、DVR、controlling keyboard etc.

Preset: 128presets

inspection teams: 8 groups (16presets per group)

stay time for each preset positions: 2、4、6、8、10seconds adjustable

2. Mechanical Specifications

PTZ rotation angle: horizontal 360° unlimited rotation, vertical +3° —90°

PTZ rotation speed: IR medium speed dome: horizontal 6° /sec~40° /sec (grade 4 adjustable)

IR high speed dome: horizontal 0.1° /sec~220° /sec

Rotation limit: horizontal is adjustable in the range PTZ rotation angle of 360° , software and photoelectricity limit

Permit camera + lens: 9" size: 120mm (L) ×60 (H) ×60 (W) mm

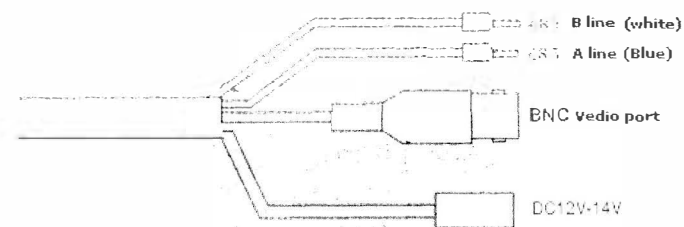
3. Environment

Working temperature: -35℃—+69℃ (temperature control) : Built-in 45℃ environment temperature.

Working humidity: 90%RH

Setup connection

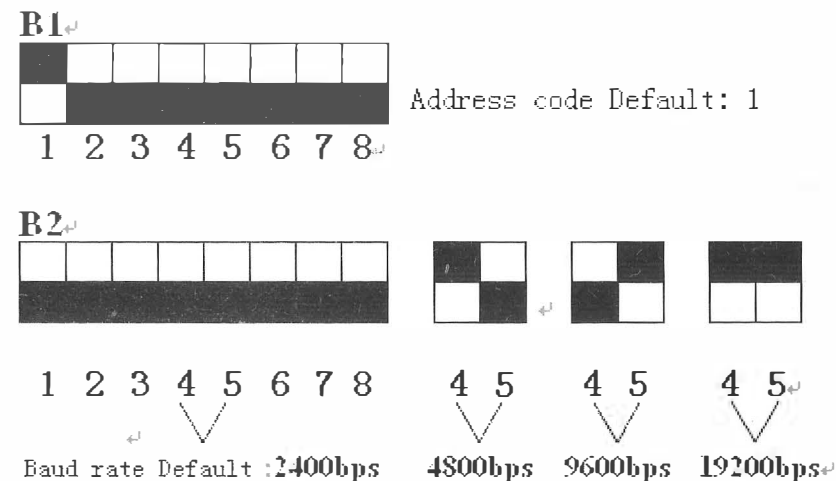
1、Signal of the camera and power cable connection please reference chart 1



Address, Protocol, Baud rate setting

The IR dome camera is built-in decoder board, through decoder to set the address, protocol, baud rate settings, realized PTZ and camera lens control of dome camera. This product designed the dial switch located on the sphere, given the set of convenient and stability, there is a piece of gusset plate under the ball cover which can open and close at any time. Open the gusset plate can see two 8-bit dial switch.

1-8 of dial up B1 used to set address code of the dome, Dial-up B2 in the 4 and 5 baud rate setting for the dome, As shown in figure 2



(chart 2)

1.Address codes setting

No.1~ No.8 are use to set the address codes of the bits B1 dial switch, you can set address codes within the range 1~255, factory default as 1. Use binary, dial every number to be "ON" is means as 1, dial to be "OFF" is means as 0, details please reference the sheet.

Address codes and dial codes switch sheet (Binary), calculate it according to this sheet:

Binary	Add	Binary	Add	Binary	Add	Binary	Add
00000000	0	11110000	15	01111000	30	10110100	45
10000000	1	00001000	16	11111000	31	01110100	46

01000000	2	10001000	17	00000100	32	11110100	47
11000000	3	01001000	18	10000100	33	00001100	48
00100000	4	11001000	19	01000100	34	10001100	49
10100000	5	00101000	20	11000100	35	01001100	50
01100000	6	10101000	21	00100100	36	11001100	51
11100000	7	01101000	22	10100100	37	00101100	52
00010000	8	11101000	23	01100100	38	10101100	53
10010000	9	00011000	24	11100100	39	01101100	54
01010000	10	10011000	25	00010100	40	11101100	55
11010000	11	01011000	26	10010100	41	00011100	56
00110000	12	11011000	27	01010100	42	10011100	57
10110000	13	00111000	28	11010100	43	01011100	58
01110000	14	10111000	29	00110100	44	11011100	59
.....							
00111100	60	00111100	61	01111100	62	11111100	63
.....							
00011111	248	10011111	249	01011111	250	11011111	251
00111111	252	10111111	253	01111111	254	11111111	255

2. Baud rate setting

Baud rate can set through the 4th ~5th dial codes, Can be set up the baud rate to 2400BPS、4800BPS、9600BPS、19200BPS。dial every number to be "ON" is means as 1, dial to be "OFF" is means as 0, Baud rate and dial codes switch matching sheet reference sheet 3 .

Baud rate and dial codes switch matching sheet

Dial codes	2400 bps	4800 bps	9600 bps	19200 bps
No.4	OFF	ON	OFF	ON
No.5	OFF	OFF	ON	ON

Please reference table 3 to finish the dial switch setting according to the control equipment of the dome adopted by baud rate of communication.

3. Protocol setting

Decoder of Speed dome will automatically match protocol, no need to set; PELCO_D、PELCO_P support PELCO_D and PELCO_P

Function setting

1. Set/call preset

Preset function refers to through controlling equipment setting / call IR dome position parameters of the horizontal Angle and vertical Angle, by storing in digital form to the IR dome, when needs to call these parameters, adjust the IR dome to preset a set state. Operator can control it convenient and efficient through controlling keyboard and other devices to set/call preset position. This IR dome camera supports 128 presets.

(1) Set preset position

Make the IR dome moved to the corresponding position by controlling keyboard, DVR and other control equipments, You can refer to the Preset function of controlling keyboard or DVR to process preset settings after using the zoom buttons of the controlling keyboard, DVR etc controlling devices to adjust Multiples of the lens to right angle, and enter the corresponding number of preset position

Example: Using a type of controlling keyboard to set No.1 preset position
a. Press the key "set preset", then the camera is moved to the need position by joystick.

Make the lens step to the angle in demand by pressing the key "zoom"

b. Enter "1"

c. Press the key "enter"

(2) Call preset

Refer to the calling preset function of controlling keyboard or DVR to process preset calling, and according to the required preset position number to call.

Example: using a type of controlling keyboard to call No.1 preset position.
a. Press the key" call preset position", then enter "1"

b. Click 'Enter'

2. Calling of automatically cruise routes/clear

Auto tour is by operation to set the cruise routes arbitrarily ,an external command can let the dome camera make a tour automatically according to the specified route, and staying in the corresponding preset position. there are 8 auto cruise routes for the IR dome camera, Each tour lines can store up to 16 presets at most

(1) Call auto cruise routes

By controlling keyboard and DVR to implement the command "call No.41"preset position. It can make the dome camera auto tour the preset position of it has been set in the first cruise route "call No.42 preset position" as auto tour the preset position of the second tour line. Corresponding number of preset position for 8cruise routes, please reference table 6.

Example: Use a type of controlling keyboard to start using the second auto tour line.

a、Press the key "call preset position", then enter "42"

b、press the key "Enter"

(2) Stay time setting of preset position when auto tour

Can set stay time as 2 /4 /6 /8 /10 Seconds optional for each preset position when the IR dome camera auto tour the preset position. operation method by controlling keyboard, DVR to implement the command "set No.51 preset position", the stay time for 2 sec; "set No.52 preset position", the stay time for 4 sec; Stay time setting command for auto tour reference table 5

Table 5: stay time command relation table of auto tour preset position

Stay time	set commands	Stay time	Set commands
2 sec	set No.51 preset position	4 sec	set No.52 preset position
6 sec	set No.53 preset position	8 sec	set No.54 preset position
10 sec	set No.55 preset position		

Example: using a type of controlling keyboard to set the stay time be 8 sec

a、Press the key "set preset position", then enter "54"

b、Press "enter"

(3) Clear the automatically cruise routes

Clear auto tour line is means clear all presets of this tour line. operation method by controlling keyboard or DVR to implement "set No.41 preset

position", it can clear all presets of the first cruise route of the dome. And "Set No.42 preset position" for clearing all presets of the second cruise routes of the dome. Corresponding presets number for clear commands of 8 tour lines. Please reference table 6

Example: Use a type of control keyboard to remove the preset position in the third automatically cruise routes

a、Press the key "set preset position", then enter "43"

b、Press the key "enter"

Table6: corresponding preset position number for cruise route and the relation table of calling or delete command

Cruise routes	Call commands	Delete commands	Corresponding number of preset position
NO.1	Call 41# preset position	Set No.41 preset position	No. 1—16# preset position
NO.2	Call 42# preset position	Set No.42 preset position	No. 17—32# preset position
NO.3	Call 43# preset position	Set No.43 preset position	No. 65—80# preset position
NO.4	Call 44# preset position	Set No.44 preset position	No. 113 — 128# preset position
NO.5	Call 45# preset position	Set No.45 preset position	No. 129 — 144# preset position
NO.6	Call 46# preset position	Set No.46 preset position	No. 145 — 160# preset position
NO.7	Call 47# preset position	Set No.47 preset position	No. 161 — 176# preset position
NO.8	Call 48# preset position	Set No.48 preset position	No. 177 — 192# preset position

Remark: Because of auto tour with a long time, power off or outside force leads to the preset position off normal. And by "call No.34 preset position" to make the dome camera rotating to zero for restoring the standard state.

3、limit positions on left and right、Auto scan、 setting of scanning speed、 start using and delete

The IR dome uses the conductive ring and photoelectricity to limit the position , 360° continuous rotation under the circumstance of factory default. it can get through the controlling keyboard and DVR to set the left and right rotation position of the dome. and automatically scan between the position limit of setting..

(1) Setting of limit position on left and right

By controlling keyboard or DVR to implement the command "set No.35 preset position" after moved the dome to the right for the required position , Implementing the command "set No.36 preset position" after made the dome rotating to the left to the position of left limit position, left and right limit position is setting done.

Now, the dome just running between these two points only.

Example: use a type of control keyboard to set limit position on left and right

- a、 Press the key "set preset position", Then make the camera moved to the need position by shaking joystick.
- b、 Enter "35"
- c、 Press the key "enter"
- d、 Moved The dome camera to the left limit required by the position by shaking joystick
- e、 Enter "36"
- f、 Press the key " enter"

(2) Start using of auto scanning

By control keyboard or DVR to implement the commands "call No.38 preset position" auto scanning function can make dome camera continuous rotation with 360° when not set limit position on left and right. The dome camera will be auto scanning back and forth between two points after setting limit position on left and right))

Example: use a type of controlling keyboard to start using auto scanning

- a、 Press the key "call preset position
- b、 Press the key "enter"

(3) Limit position on left and right to clear

By controlling keyboard or DVR to implement the command "set No.38 preset position"

Example: using some items of controlling keyboard for elimination of limit position on left and right

- a、 Press "set preset position" enter "38"
- b、 Press the key "enter"

(4) Auto horizontal scan speed setting

The IR dome camera has four gears adjustable when horizontal rotation speed of auto scanning. operation method by controlling keyboard, DVR to implement "set No.64 preset position", The scanning rotation speed is 40° /sec;"set No.63 preset position", the scanning rotation speed is 15° /sec; Horizontal rotation speed setting commands when auto scanning please reference the table 7.

Table 7: auto scanning horizontal speed rotation setting commands relation table

horizontal rotation speed	setting commands	horizontal rotation speed	set commands
6° /sec	set No.61 preset position	9° /sec	set No.62 preset position
15° /sec	set No.63 preset position	40° /sec	Set No.64 preset position

Example: Using some items of controlling keyboard to set horizontal speed rotation be 9° /sec when scanning

- a、 Press the key "set preset position", then enter "62"
- b、 Press the key "enter"

Factory Default

By controlling keyboard or DVR to implement the command "call No.115 preset position" then can make the dome camera settings back to factory default state. Has now set all preset position function will be cleared (limit position on left and right will not be cleared)

Example: Using a type of controlling keyboard to restore the factory default

a、Press the key " call preset position", then enter "115"

b、Press " enter"

Camera menu setting

a: Open the camera menu: by controlling keyboard, DVR and other control equipments pressing the key "aperture"to open menu; Or "call No.95 preset position" to open camera menu.

b: By controlling keyboard, DVR and other control equipment pressing the key "zoom" to realize mobility options

c: By controlling keyboard, DVR and other control equipments pressing the key "focus" to realize function selection

d: This camera focus mode configured at the factory for the automatic focusing, keying focusing is to realize the automatic focusing when it zoomed, and to close the focusing when it stopped .

Notice

1. The power supply of this product should be DC12V-14V, please use matched power from our company to supply;

2. Forbid turning around by outside force whether power on or off

3. Dial switch is on the bottom of the ball cover. Open buckle, you can adjust the address code and baud rate. Please don't open without permission

4. In order to ensure the precision of preset position, please set left and right limit position before setting preset position. Make sure the preset position in limit range;

5. If the preset position come to off normal after long time of auto tour, power off or outside force, by "calling 34 preset position "command to rest the dome to normal state;

6. In order to control the infrared light calorific value effectively and ordinary infrared machine "flashlight" phenomenon independent control, switch the lens at 11 times, so if there is one set of lamp off, are all normal phenomenon. Because the IR light off means they are under a state of rest when the irradiation angle and the current camera viewing angle are not consistent.

7. The preset setting of this camera with lens preset position as the same as ordinary high-speed dome camera. As for setup method, please refer to "preset position settings"

8, The camera outlet is directly high temperature conductive ring lines avoid interface, please don't pull output cable.

Fast operation summary table of dome

camera

Function	Operation mode
No.1 (No. 1—16# preset position)	Call 41# preset position
No.2 (No. 17—32# preset position)	Call 42# preset position
No.3 (No. 65—80# preset position)	Call 43# preset position
No.4 (No.113—128#preset position)	Call 44# preset position
No.5 (No. 129—144# preset position)	Call 45# preset position
No.6 (No. 145—160# preset position)	Call 46# preset position
No.7 (No. 161—176# preset position)	Call 47# preset position
No.8 (No. 177—192# preset position)	Call 48# preset position
cruise preset position stay time is 2sec	set No.51 preset position
cruise preset position stay time is 4sec	set No.52 preset position
cruise preset position stay time is 6sec	set No.53 preset position
cruise preset position stay time is 8sec	set No.54 preset position
cruise preset position stay time is 10sec	set No.55 preset position
start using 360 ° horizontal continuous scanning	call No.96、No.97、No.98、No.99 、 No.100 preset position, corresponding speed is 3° /sec,6° /sec,9° /sec,15
set left limit position	set No.35 preset position
set right limit position	set No.36 preset position
start using left and right limit position	set No.38 preset position
delete left and right limit position scanning	set No.38preset position
set limit position scanning speed	Set No.60、No.61、No.62、No.63、No.64 preset position, Corresponding speed is 3° /sec,6° /sec, 9° /sec,、15°

auto flip (on)/ auto flip (off)	call No.116 preset position opening, set No.116 closing
Proportional speed down(on)/ Proportional speed down(off)	call No.106 preset position to open, set No.106 to close
leisure action switch	Call No.105 preset position to open, set No.105 to close
Leisure action	Call No.101 : monitoring position (No.1 preset position) Call No.102 : scanning with 360° (15° /sec)
force mode for IR light switch	automatic mode: Call No.81 preset position positive opening : call No.82 preset
return to sensor location (zero)	call No.34 preset position
initialization (restore the factory default)	call No.115 preset position
open camera menu	call No.95 preset position
IR distance light switch multiple settings	call/set No.246 first, call/set No.123 again

Simple sheet for check faults

Faults	Possible reasons	Solution
Power on, but no action, no image, Indicator light off.	Power wires connected	Correct
	Power damaged	Change
	Power is not right	Change
	Power wires are poor connection	Rule out
Power on, camera can check itself and	Address codes, baud rate are wrong	Reset the address codes and baud rate
	Wrong protocol	Correct

	RS485 wires connected wrong or damaged	Check RS485wires connection
Self-check is abnormal, have image but with electrical motor working voice	Machine faults	repair
	Camera is crooked	Move and adjust its position
	Power is not enough	Change the power
Image is unstable	Video wires are poor connection	Rule out
	Power is not enough	Change the power
	Video route is bearing	Rule out
Bad controlling	Power is not enough	Change power, you'd better put the power near to the camera
	Check the farthest camera's controlling resistance, see if it added into	Add the resistance
	The distance is too long, 485 signal are cut down	Change transverter