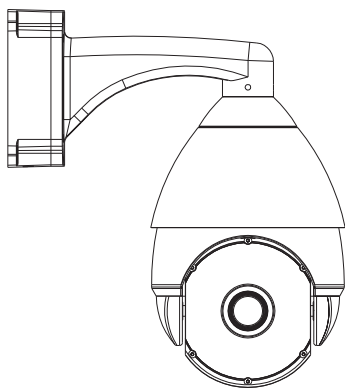


# 7 Inch IR Variable Speed Dome Camera

## User Manual



### Note:

- Read this manual carefully before installation and operation. Keep it handy for later reference.
- No further notification shall be made in case the modification of product appearance and/or technical parameters.

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## 1 Feature

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- \* OSD English Menu.
- \* 128 preset positions.
- \* 8 tours, 16 presets/ tour.
- \* Aluminum alloy structure.
- \* IR Distance: 130meters.
- \* 360° continuous rotation.
- \* Pan/Tilt Speed 0.5°~20°/sec.
- \* Lighting proof and surge proof.
- \* Auto running memory against power outage;
- \* Support multi-protocols: Pelco D/P, Sony, LG, CNB etc.
- \* Support linear scan, scan speed: 6°/9°/15°/20° adjustable.
- \* IR LEDs and Lens are always synchronized, no blind monitor position.

## 2 Specification

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Model	IR Variable Speed Dome Camera
Power Supply	Output: DC12V±5%,5A; Input:AC100V~240V 50/60Hz
Power (Max.)	15VA(IR Off) 36VA(IR On)
Output Voltage	DC12V
Pan/Tilt Speed	0.5°~20°/sec
Pan Range	0°~360°Continuous
Tilt Range	0°~90°
IR Far Light switch	6 times (default), setup in personal
Preset	128 presets, 8 tours, 16 presets/tour
Line Scan	4, speed could be adjustable (6°,9°,15°,20°/sec)

Protection Temperature	70°C±3°C
Communication	RS485
Protocol	Pelco-P/D auto detected
Baud Rate	2400bps,4800bps,9600bps,19200bps
Address Code	255
Working Temperature	Indoor: 0°C~50°C Outdoor: -30°C~50°C
Humidity	<90%
Carton Diameter	31x31x45cm

### **3 Installation Instruction**

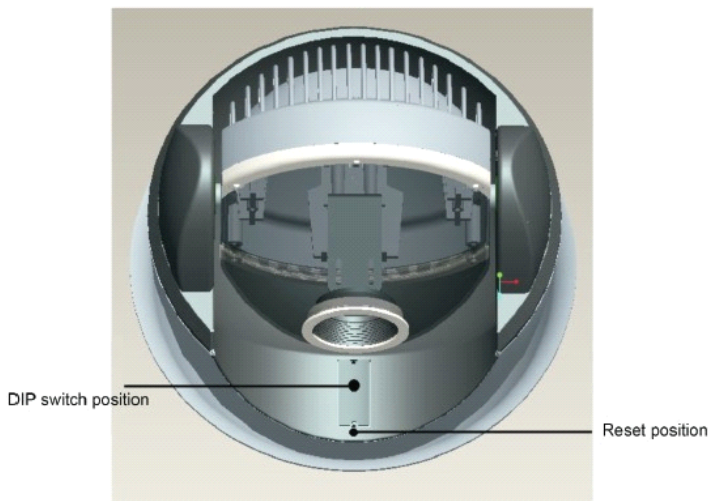
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#### **3.1 Installation Preparation**

- A. Only qualified and experienced person can carry on this installation.
- B. Please refer to installation instructions.
- C. Speed dome installation is sure to use clean gloves, please avoid using metal, hard objects or hands directly touch the down cover.
- D. After installation, please use soft towel to clean the down cover when necessary. The acid sweat mask of fingerprint will corrode the coating of down cover and scratch on down cover will cause vague images.
- E. Please check all parts are complete before opening the package.
- F. Please check the space and toughness of the site before installing.
- G. Please use reliable tools, e.g. screw driver, and spanner. Also please check the DIP switch setting is correct.

### 3.2 DIP Switch Setup

(1) Detach the upper housing and bottom cover, you can see DIP switch



(2) Baud Rate Setup

Decoder Switch: 9~10 (1=ON,0=OFF)

Baud Rate	Switch 9~10 setting		Max transmission distance (M)
	9	10	
2400BPS	0	0	1800
4800BPS	1	0	1200
9600BPS	0	1	800
19200BPS	1	1	600

**Notice: please restart the camera after setting switch.**

## 4 Installation

### 4.1 Installation Type

There are 2 types of installation.

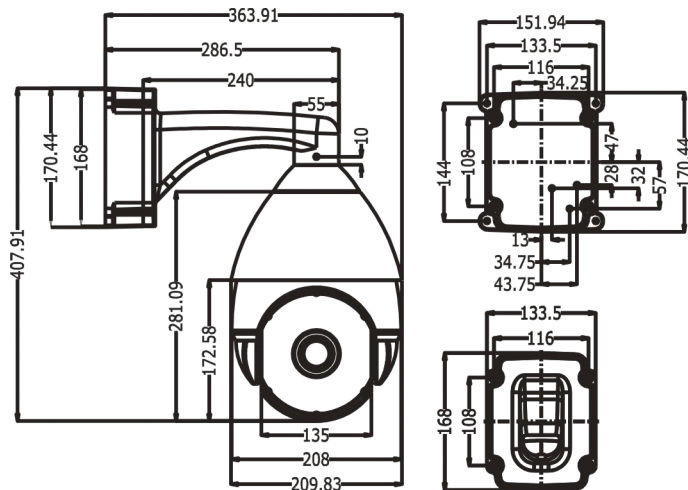
- (1) Wall Mount. (Standard configuration)
- (2) Suspended Mount. (Optional)

### 4.2 Installation Steps

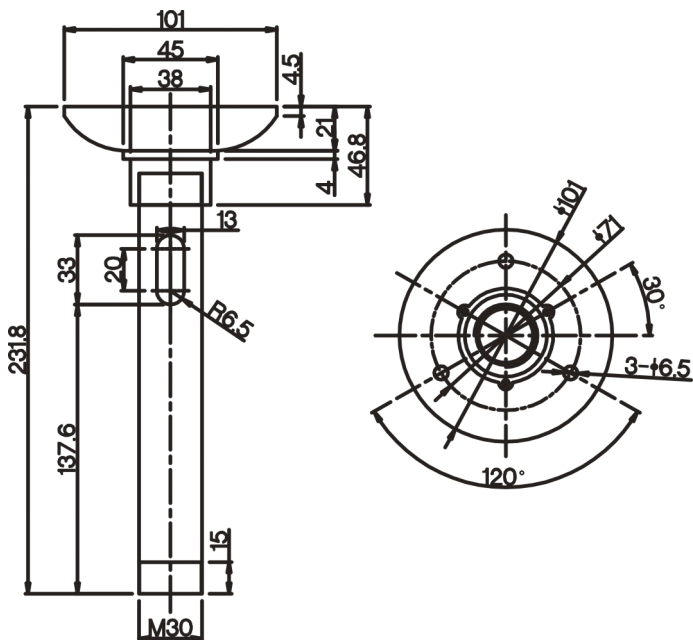
A. Please take the wall bracket as a template to mark the screw positions of the four location holes. Drill the holes and put the supplied screw inside.

The dimension of the holes as followed:

#### Wall Mount



## Suspended Mount



B. Take out the cables (power cable, video cable, control cable and combination cable) through the bracket base and upper housing, and leave enough length of the cable.

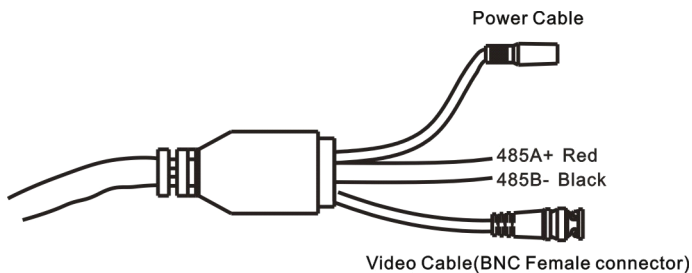
C. Then fasten the wall bracket by using nuts, spring washers and flat washers.

D. Please clean up the stains on the dome cover after installed.

### 4.3 System Connection

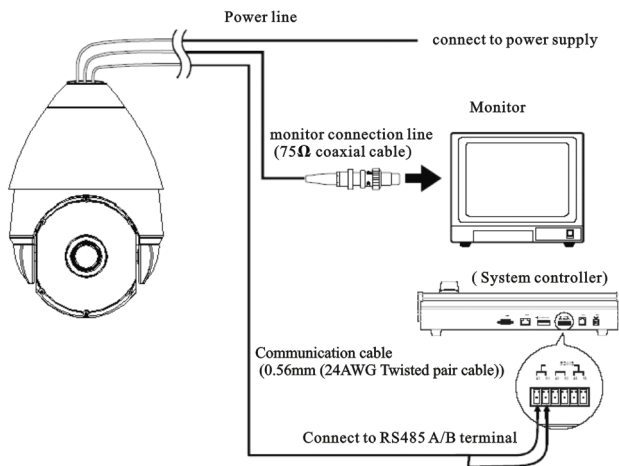
(1) According to the label on the main connection line, Please connect the power cable, video / control cable correctly, connect RS485 cable to its corresponding cable connector, and then connect the cable connector to its socket. The connection is as below: (The power cable should be dealing with

waterproof.)



(2) Fix the bracket to the Power Base.

(3) Connect the control system and display device as the picture of System Connection shows.



**Note: please swathe the waterproof belt to the connector if you install outside.**



## 5 Operation

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### 5.1 PTZ Control

Control the dome direction by joystick of keyboard, the default speed is  $0.5^{\circ}\sim 20^{\circ}/\text{Sec}$  and adjustable.

### 5.2 Preset Setting

IR Variable Speed Dome Camera can set 128 presets, support lens preset. Part of preset for special purpose can not be edited, as control order.

Turn the camera lens to the area to be supervised, and zoom to proper position, firstly input the presets, and then press the Presets on the keyboard (**settings differ in different control methods**).

For instance, operation for # 1 Presets on keyboard is to turn the camera lens to the area to be supervised, and input “1” on the keyboard, and then press Presets button (such as “S-PRESET”), and the # 1 Presets has been well set.

### 5.3 Call Presets

Firstly input the Presets number on the keyboard, then press the “Call Presets” button, the intelligent Dome will rotate to the Presets that has been previously set after the operation (**Call methods varies in different control methods**).

For instance, Call for # 1 Presets on the keyboard, firstly input “1” on the keyboard, and then press the Call Presets button (such as “PRESET”) , and the intelligent will rotate to the Presets that has been previously set.

### 5.4 Lens Control

A. Use “TELE” and “WIDE” key to control the zoom (Telephoto or Wide-angle).

B. Use “FAR” and “NEAR” key to control the focus (Manual/ Auto).

**Notice: do not use Focus under the below conditions.**

- The target is not in the center of the picture.
- View near and far picture at same time.
- The target is too dark.

- Too strong high light or back light.
- The target move too fast.

C. Iris control: Auto

For manual control, please use the “OPEN/CLOSE” key on the keyboard to control the Iris.

## 5.5 Auto Scan Control

Set left limit position (#35 preset), right limit position (#36 preset); if the position is the same, the camera rotate 360° continuous when auto scan, then setup the pan scan speed (the method as follow), call#38 preset or auto key begin auto scan.

Use #38 preset to delete the auto scan.

### Setup the auto scan speed:

Pan Speed	Setup Order	Tilt Speed	Setup Order
6°/Sec	Call #61 preset	9°/Sec	Call #62 preset
15°/Sec	Call #63 preset	20°/Sec	Call #64 preset

## 5.6 Auto Tour Scan

The dome camera support auto tour scan.

For the shortcut operation of tour scan presets, take the **appendix II** as reference.

## 5.7 IR Far/Near Light Switch

(1) Setting the optical zoom of lens when IR Far/Near Light Switch. Range from 1~the max. Optical zoom of camera module. The default is 6X.

(2) Switch method (should camera module support): Adjust to the optical zoom one wants, and then sett #246 twice.

## 5.8 Error Correction for Presets

For various reasons, the Dome may have the Presets deviation, and the Dome can correct its error by Call #34 preset.

## 5.9 Restore Factory Setting

Call #40 preset restore to factory defaults.

## 6 RS485 Data Cable Connection

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A. We suggest using chain connection or bus connection. The cable length keeps in 7 meters if you use bus connection.

B. Regarding 120Ω resistances: once the communication distance is more than 300 meters you have to add a terminal resistance in the farthest terminal of 485 cables. When the device quantity is less than 22 pieces, you could not add the resistance. Just change the jumper cap on the decoder board from jump pin 1 and 2 to pin 2 and 3 to enhance the resistance.

C. Max 32 device can be connected without control code distributor. If you need more devices, an extra distributor will be needed.

D. Farthest distance of RS485 communication cable is 1800 meters, Due to different baud rate, transmission distance will be different. For longer transmission distances, an extra control code distributor or amplifier will be needed.

E. In order to avoid the interference, please keep the RS485 cable away from high voltage cable and separate from other power wire.

## 7 Appendix

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### I DIP Switch setup

K1 DIP switch is an address switch, consist of 8 number, use 8421 binary code, max 255 address. When the switch is in the “ON” position, the number from 1~8 corresponding to 1,2,4,8,16,32,64,128. For example, if you set 1,3,5,7 switch to the “ON” position, the corresponding address will be  $1+4+16+64=85$ . please refer to below details.

**Sheet 1 (1=ON, 0=OFF)**

DIP switch Address	K1 ID Switch(number 1- number 8)							
	1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0
5	1	0	1	0	0	0	0	0
7	1	1	1	0	0	0	0	0
9	1	0	0	1	0	0	0	0
11	1	1	0	1	0	0	0	0
13	1	0	1	1	0	0	0	0
15	1	1	1	1	0	0	0	0
17	1	0	0	0	1	0	0	0
19	1	1	0	0	1	0	0	0
21	1	0	1	0	1	0	0	0
23	1	1	1	0	1	0	0	0
25	1	0	0	1	1	0	0	0
27	1	1	0	1	1	0	0	0
29	1	0	1	1	1	0	0	0
31	1	1	1	1	1	0	0	0
33	1	0	0	0	0	1	0	0
35	1	1	0	0	0	1	0	0
37	1	0	1	0	0	1	0	0
39	1	1	1	0	0	1	0	0
41	1	0	0	1	0	1	0	0
43	1	1	0	1	0	1	0	0
45	1	0	1	1	0	1	0	0
47	1	1	1	1	0	1	0	0

DIP switch Address	K1 ID Switch(number 1- number 8)							
	1	2	3	4	5	6	7	8
2	0	1	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0
6	0	1	1	0	0	0	0	0
8	0	0	0	1	0	0	0	0
10	0	1	0	1	0	0	0	0
12	0	0	1	1	0	0	0	0
14	0	1	1	1	0	0	0	0
16	0	0	0	0	1	0	0	0
18	0	1	0	0	1	0	0	0
20	0	0	1	0	1	0	0	0
22	0	1	1	0	1	0	0	0
24	0	0	0	1	1	0	0	0
26	0	1	0	1	1	0	0	0
28	0	0	1	1	1	0	0	0
30	0	1	1	1	1	0	0	0
32	0	0	0	0	0	1	0	0
34	0	1	0	0	0	1	0	0
36	0	0	1	0	0	1	0	0
38	0	1	1	0	0	1	0	0
40	0	0	0	1	0	1	0	0
42	0	1	0	1	0	1	0	0
44	0	0	1	1	0	1	0	0
46	0	1	1	1	0	1	0	0
48	0	0	0	0	1	1	0	0

49	1 0 0 0 0 1 1 0 0	50	0 1 0 0 1 1 0 0
51	1 1 0 0 1 1 0 0	52	0 0 1 0 1 1 0 0
53	1 0 1 0 1 1 0 0	54	0 1 1 0 1 1 0 0
55	1 1 1 0 1 1 0 0	56	0 0 0 1 1 1 0 0
57	1 0 0 1 1 1 0 0	58	0 1 0 1 1 1 0 0
59	1 1 0 1 1 1 0 0	60	0 0 1 1 1 1 0 0
61	1 0 1 1 1 1 0 0	62	0 1 1 1 1 1 0 0
63	1 1 1 1 1 1 0 0	64	0 0 0 0 0 0 1 0
65	1 0 0 0 0 0 1 0	66	0 1 0 0 0 0 1 0
67	1 1 0 0 0 0 1 0	68	0 0 1 0 0 0 1 0
69	1 0 1 0 0 0 1 0	70	0 1 1 0 0 0 1 0
71	1 1 1 0 0 0 1 0	72	0 0 0 1 0 0 1 0
73	1 0 0 1 0 0 1 0	74	0 1 0 1 0 0 1 0
75	1 1 0 1 0 0 1 0	76	0 0 1 1 0 0 1 0
77	1 0 1 1 0 0 1 0	78	0 1 1 1 0 0 1 0
79	1 1 1 1 0 0 1 0	95	1 1 1 1 1 0 1 0
81	1 0 0 0 1 0 1 0	82	0 1 0 0 1 0 1 0
83	1 1 0 0 1 0 1 0	84	0 0 1 0 1 0 1 0
85	1 0 1 0 1 0 1 0	86	0 1 1 0 1 0 1 0
87	1 1 1 0 1 0 1 0	88	0 0 0 1 1 0 1 0
89	1 0 0 1 1 0 1 0	90	0 1 0 1 1 0 1 0
91	0 0 1 1 1 0 1 0	92	0 0 1 1 1 0 1 0
93	1 0 1 1 1 0 1 0	94	0 1 1 1 1 0 1 0
95	1 1 1 1 1 0 1 0	96	0 0 0 0 0 1 1 0
97	1 0 0 0 0 1 1 0	98	0 1 0 0 0 1 1 0
99	1 1 0 0 0 1 1 0	100	0 0 1 0 0 1 1 0
101	1 0 1 0 0 1 1 0	102	0 1 1 0 0 1 1 0

103	1 1 1 0 0 1 1 0	104	0 0 0 1 0 1 1 0
105	1 0 0 1 0 1 1 0	106	0 1 0 1 0 1 1 0
107	1 1 0 1 0 1 1 0	108	0 0 1 1 0 1 1 0
109	1 0 1 1 0 1 1 0	110	0 1 1 1 0 1 1 0
111	1 1 1 1 0 1 1 0	112	0 0 0 0 1 1 1 0
113	1 0 0 0 1 1 1 0	114	0 1 0 0 1 1 1 0
115	1 1 0 0 1 1 1 0	116	0 0 1 0 1 1 1 0
117	1 0 1 0 1 1 1 0	118	0 1 1 0 1 1 1 0
119	1 1 1 0 1 1 1 0	120	0 0 0 1 1 1 1 0
121	1 0 0 1 1 1 1 0	122	0 1 0 1 1 1 1 0
123	1 1 0 1 1 1 1 0	124	0 0 1 1 1 1 1 0
125	1 0 1 1 1 1 1 0	126	0 1 1 1 1 1 1 0
127	1 1 1 1 1 1 1 0	128	0 0 0 0 0 0 0 1
129	1 0 0 0 0 0 0 1	130	0 1 0 0 0 0 0 1
131	1 1 0 0 0 0 0 1	132	0 0 1 0 0 0 0 1
133	1 0 1 0 0 0 0 1	134	0 1 1 0 0 0 0 1
135	1 1 1 0 0 0 0 1	136	0 0 0 1 0 0 0 1
137	1 0 0 1 0 0 0 1	138	0 1 0 1 0 0 0 1
139	1 1 0 1 0 0 0 1	140	0 0 1 1 0 0 0 1
141	1 0 1 1 0 0 0 1	142	0 1 1 1 0 0 0 1
143	1 1 1 1 0 0 0 1	144	0 0 0 0 1 0 0 1
145	1 0 0 0 1 0 0 1	146	0 1 0 0 1 0 0 1
147	1 1 0 0 1 0 0 1	148	0 0 1 0 1 0 0 1
149	1 0 1 0 1 0 0 1	150	0 1 1 0 1 0 0 1
151	1 1 1 0 1 0 0 1	152	0 0 0 1 1 0 0 1
153	1 0 0 1 1 0 0 1	154	0 1 0 1 1 0 0 1
155	1 1 0 1 1 0 0 1	156	0 0 1 1 1 0 0 1

157	1 0 1 1 1 1 0 0 1	158	0 1 1 1 1 1 0 0 1
159	1 1 1 1 1 1 0 0 1	160	0 0 0 0 0 1 0 1
161	1 0 0 0 0 1 0 1	162	0 1 0 0 0 1 0 1
163	1 1 0 0 0 1 0 1	164	0 0 1 0 0 1 0 1
165	1 0 1 0 0 1 0 1	166	0 1 1 0 0 1 0 1
167	1 1 1 0 0 1 0 1	168	0 0 0 1 0 1 0 1
169	1 0 0 1 0 1 0 1	170	0 1 0 1 0 1 0 1
171	1 1 0 1 0 1 0 1	172	0 0 1 1 0 1 0 1
173	1 0 1 1 0 1 0 1	174	0 1 1 1 0 1 0 1
175	1 1 1 1 0 1 0 1	176	0 0 0 0 1 1 0 1
177	1 0 0 0 1 1 0 1	178	0 1 0 0 1 1 0 1
179	1 1 0 0 1 1 0 1	180	0 0 1 0 1 1 0 1
181	1 0 1 0 1 1 0 1	182	0 1 1 0 1 1 0 1
183	1 1 1 0 1 1 0 1	184	0 0 0 1 1 1 0 1
185	1 0 0 1 1 1 0 1	186	0 1 0 1 1 1 0 1
187	1 1 0 1 1 1 0 1	188	0 0 1 1 1 1 0 1
189	1 0 1 1 1 1 0 1	190	0 1 1 1 1 1 0 1
191	1 1 1 1 1 1 0 1	192	0 0 0 0 0 1 1
193	1 0 0 0 0 1 1	194	0 1 0 0 0 1 1
195	1 1 0 0 0 1 1	196	0 0 1 0 0 1 1
197	1 0 1 0 0 1 1	198	0 1 1 0 0 1 1
199	1 1 1 0 0 1 1	200	0 0 0 1 0 1 1
201	1 0 0 1 0 1 1	202	0 1 0 1 0 1 1
203	1 1 0 1 0 1 1	204	0 0 1 1 0 1 1
205	1 0 1 1 0 1 1	206	0 1 1 1 0 1 1
207	1 1 1 1 0 1 1	208	0 0 0 0 1 1 1
209	1 0 0 0 1 1 1	210	0 1 0 0 1 1 1

211	1 1 0 0 1 0 1 1		212	0 0 1 0 1 0 1 1
213	1 0 1 0 1 0 1 1		214	0 1 1 0 1 0 1 1
215	1 1 1 0 1 0 1 1		216	0 0 0 1 1 0 1 1
217	1 0 0 1 1 0 1 1		218	0 1 0 1 1 0 1 1
219	1 1 0 1 1 0 1 1		220	0 0 1 1 1 0 1 1
221	1 0 1 1 1 0 1 1		222	0 1 1 1 1 0 1 1
223	1 1 1 1 1 0 1 1		224	0 0 0 0 0 1 1 1
225	1 0 0 0 0 1 1 1		226	0 1 0 0 0 1 1 1
227	1 1 0 0 0 1 1 1		228	0 0 1 0 0 1 1 1
229	1 0 1 0 0 1 1 1		230	0 1 1 0 0 1 1 1
231	1 1 1 0 0 1 1 1		232	0 0 0 1 0 1 1 1
233	1 0 0 1 0 1 1 1		234	0 1 0 1 0 1 1 1
235	1 1 0 1 0 1 1 1		236	0 0 1 1 0 1 1 1
237	1 0 1 1 0 1 1 1		238	0 1 1 1 0 1 1 1
239	1 1 1 1 0 1 1 1		240	0 0 0 0 1 1 1 1
241	1 0 0 0 1 1 1 1		242	0 1 0 0 1 1 1 1
243	1 1 0 0 1 1 1 1		244	0 0 1 0 1 1 1 1
245	1 0 1 0 1 1 1 1		246	1 0 1 0 1 1 1 1
247	1 1 1 0 1 1 1 1		248	0 0 0 1 1 1 1 1
249	1 0 0 1 1 1 1 1		250	0 1 0 1 1 1 1 1
251	1 1 0 1 1 1 1 1		252	0 0 1 1 1 1 1 1
253	1 0 1 1 1 1 1 1		254	0 1 1 1 1 1 1 1
255	1 1 1 1 1 1 1 1			

**Notice: some protocols and address start from 0, if you can not control the dome camera, try to do  $\pm 1$  of address code.**



## II Shortcuts Operation

<b>Function</b>	<b>Control Method</b>
Tour Scan Stay 2 Seconds	Set #51 preset
Tour Scan Stay 4 Seconds	Set #52 preset
Tour Scan Stay 6 Seconds	Set #53 preset
Tour Scan Stay 8 Seconds	Set #54 preset
Tour Scan Stay 10 Seconds	Set #55 preset
Left and Right Scan 6°/S	Set #61 preset
Left and Right Scan 9°/S	Set #62 preset
Left and Right Scan 15°/S	Set #63 preset
Left and Right Scan 20°/S	Set #64 preset
Start 1 <sup>st</sup> Tour	Call #41 preset (corresponding with 1~16 presets)
Start 2 <sup>nd</sup> Tour	Call #42 preset (corresponding with 17~32 presets)
Start 3 <sup>rd</sup> Tour	Call #43 preset (corresponding with 65~80 presets)
Start 4 <sup>th</sup> Tour	Call #44 preset (corresponding with 113~128 presets)
Start 5 <sup>th</sup> Tour	Call #45 preset (corresponding with 129~144 presets)
Start 6 <sup>th</sup> Tour	Call #46 preset (corresponding with 145~160 presets)
Start 7 <sup>th</sup> Tour	Call #47 preset (corresponding with 161~176 presets)
Start 8 <sup>th</sup> Cruise	Call #48 preset (corresponding with 177~192 presets)

Set Left Limit position	Setting #35 preset
Set Right Limit position	Setting #36 preset
Start Left and Right Scan	Call #38 preset
Set IR far/near light	Set #246 preset (twice)
Clear Left and Right Limit position	Setting #38 preset
Preset Error Correction	Call #34 preset
Restore Factory Setting	Setting #40 preset

## 8 Trouble Shooting

Troubles	Reason	Solution
No action when power on	<ol style="list-style-type: none"> <li>1. The power supply is not connected correctly.</li> <li>2. The fuse is broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct the connection.</li> <li>2. Check the power supply is connected, or confirms if the plug connects well.</li> <li>3. Replace the fuse.</li> </ol>
Self-testing and image are normal but the dome is out of control	<ol style="list-style-type: none"> <li>1. The dome DIP switch setting is incorrect.</li> <li>2. RS485 cable is disconnected or reversed.</li> <li>3. Incorrect RS485 cable wiring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the DIP Switch according to the DIP switch chart.</li> <li>2. Check 485 bus controls.</li> <li>3. Check the wiring.</li> <li>4. Check the control device.</li> </ol>
Some function is out of control	<ol style="list-style-type: none"> <li>1. RS485 communication signal is not balance.</li> <li>2. Control protocol is not compatible.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect 120Ω balance resistance.</li> <li>2. Reset protocol.</li> </ol>
Unclear image	<ol style="list-style-type: none"> <li>1. Focus is in manual state.</li> <li>2. Extreme zoom magnification.</li> <li>3. Dome cover is dirty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the focus mode to Auto.</li> <li>2. Downsize zoom proportion</li> <li>3. Clean the dome cover.</li> </ol>
No night vision	<ol style="list-style-type: none"> <li>1. Camera is in Color state.</li> <li>2. backlight on the top or back of the dome camera</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the day/night function to Auto.</li> <li>2. Remove the direct light source.</li> </ol>

