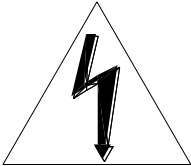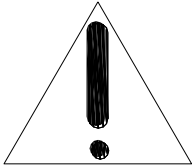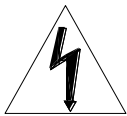# Intelligent Infra Red High Speed Dome Manual Operation

## V5.2

Please read the operation manual

Carefully before installing and using this products

I. SAFETY PRECAUTIONS:

```
┌─────────────────────────────────────────────┐
│  ⚡        ┌──────────────────┐       !      │
│ /⚡\       │     CAUTION      │      /!\     │
│/___\       ├──────────────────┤     /_●_\    │
│            │ RISK OF ELECTRIC │               │
│            │ SHOCK. DO NOT OPEN! │             │
│            └──────────────────┘               │
├─────────────────────────────────────────────┤
│                                               │
│ CAUTION:                                      │
│ TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO DOT│
│ OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE.│
│ REFER SERVICING TO QUALIFIED SERVICE PERSONNEL│
│                                               │
└─────────────────────────────────────────────┘
```

⚡ The lighting flash with a arrowhead symbol, in an equilateral triangle, is intended to alert the user. There is uninsulated "dangerous voltage" presence near by the product's enclosure which may be risk of to persons .
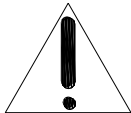
! The exclamation point within an equilateral triangle is intended to alert the user to reference of the important operating and maintenance (servicing) instructions .

```
┌─────────────────────────────────────────────┐
│ THE PRODUCT CODE MARKED ON THE BOTTOM COVER. PLEASE │
│ FILL THE CODE IN THE FOLLOWING BLANK. PLEASE SAVING │
│ THIS SPECIFICATION CAREFULLY, SO THAT CHECKING.     │
│          MODEL:_____             │
│ PRODUCT CODE:_____               │
└─────────────────────────────────────────────┘
```

Index

I. Important Safeguards

1. All the safety and operating instructions should be read before the units is operated.

2. Power supply for IR Dome Camera：AC24V.The power input power supply indicated on the base of dome or other related marking label.

3. During the course of transportation, storage and installation, the product should be avoided from incorrect operations such as heavy pressing, strong vibration etc，which can cause damage of product as there are sophisticated optical and electronic devices inside the machine.

4. Do not attempt to disassemble the camera. In order to prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside.

5. Always follow all electrical standards for safety when it is in operation. Adopt the particular power supply which is provided with the unit. RS-485 and video signal should keep enough distance with high voltage equipments and cables when they are in transmission. Precautions for anti-lightning and anti-surging should be taken if necessary.

6. Do not operate it in case temperature, humidity and power supply are beyond the limited stipulations.

7. Do not let the camera aim at the sun or the object with extreme light whatsoever it is switched on or not . Do not let the camera aim at or monitor bright and standstill object for a long time.

8. Do not use aggressive detergent to clean the main body of the camera. Wipe dirt with dry cloth. If needed, mild detergent can be used suitably.

9. Operate the intelligent speed dome camera with great care to avoid shock or vibration. It operate incorrectly, the Speed Dome could be damaged.

10. Please ensure the installation position with enough endurance when you install the intelligent IR High speed dome camera.

11. If necessary, use a commercial lens cleaning paper to clear the lens windows. Gently wipe the lens window until clean.

II. Description of Functions

The intelligent dome camera is a hi-tech CCTV product which incorporates high-clarity color camera, panoramic speed-variable PAN/TILT, multifunctional decoder, universal character generator, CPU processor, memory chip into a whole. It can largely reduce connection and installation processes of components in the system, rise up reliability of the system and facilitate installation and maintenance. Therefore it has advantages of beautiful appearance, compact structure and easy operation.

1. Dome descriptions:

a. Pan 360 °continuously rotation, manual pan control speed 0.1 °/s～260 °/s;Tilt range

-10 °～90 °,Manual operation control speed 90 °/s, pan preset speed max up to 350 °/s,tilt preset speed max up to 120 °/s.

b. Running stably at low speed with super lower noise. Pictures have no shaking.

c. Automatic flip and panoramic monitoring without blind point, the location precision up to ±0.1 °.

d. It could setup 8 cruising tracks, 8 scanning commands, 4 patterns function.

e. Home position as tracking, scanning, presets,patterns.

f. Memory function after power off, it automatically returns to the original station after power on.

g. Built-in temperature sensor, with temperature display function, can control internal air cooling system by manual or auto.

h. Coordination display function, the compass direction way could setup to the North.

i. It stores 256 preset positions, data memorize after power off.

j. Proportional pan function, it could recognize many normal using cameras.

k. Mask Privacy function.

l. Supporting Level 3 lightning, surge protection.

m. IP Grade: IP66.

n. It could analyze dome camera fault problem, some fault details information, such as pan/tilt information, and self-testing information could be displayed on the screen.

o. IR lamp opening threshold could be adjusted. It could be used at different environment.

p. Constant current dimming design, more stable infrared lamp life up to 30,000 hours.

q. This IR applies with the 3rd generation high-power IR light, multiple angles with the adjustable of brightness, could maximally achieve the best illumination.

r. With clock function, to realize the clock task.

III. Fast Commands

Number	Description	Operation Commands	
		CALL Presets	Preset point
1	Stop the current action	Number 129	
2	Run auto scanning	Number 130	
3	Setup auto scanning tilt position		Number 130
4	Run patterns	131-134	
5	Setup Patterns		131-134

6	Preserve Patterns		135
7	Run patterns between two points	141-148	
8	Setup two points scanning group1		Number 141，Number 142
9	Setup two points scanning group2		Number 143，Number 144
10	Setup two points scanning group3		Number 145，Number 146
11	Setup two points scanning group4		Number 147, Number148
12	Run groups cruising	151-158	
13	Alarm function ON	Number 160	
14	Alarm function OFF	Number 161	
15	Wiper	162	
16	Defrost	163(ON)	163(OFF)
17	IR Lamp	164(ON)	164(Auto)
18	IR Mode	165 camera mode(Withoout IR)	
19	Setup Backlight Compensation OFF	Number 170	
20	Setup Backlight Compensation ON	Number 171	
21	Setup camera Day&Night mode(Auto)	Number 177	
22	Setup camera Day&Night mode(Night)	Number 178	
23	Setup camera Day&Night mode(Day)	Number 179	
24	Setup WB(Auto)	Number 180	
25	Setup WB(Manual)	Number 181	
26	120R Resistor OFF	Number 199	
27	120R Resistor ON		Number 199
28	Reset of system parameter		Number 200

IV.Setup of Dome Camera

1.Protocol &Dome address selecting

SW2   SW1

Protocol Selecting   Dome address selecting
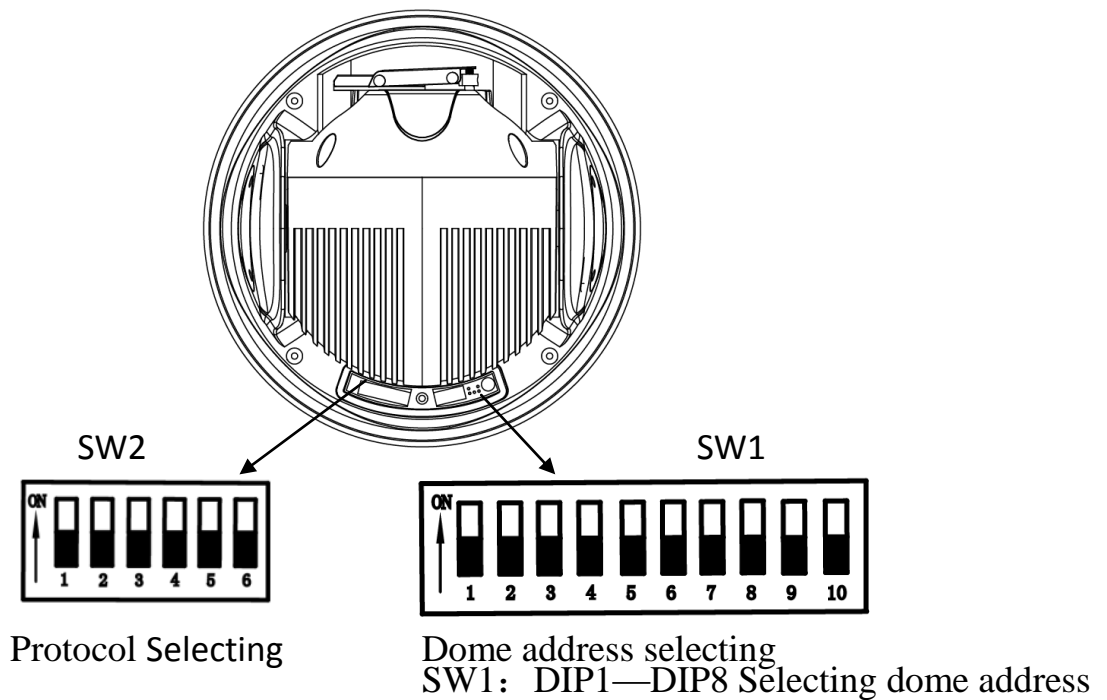SW1：DIP1—DIP8 Selecting dome address

Figure 1

2. Setup of Coding Switch of Dome Camera . As figure 1 shows，SW1 is used to set address of the dome camera from 1 – 255. The coding switches from DIP-8 to DIP-1 are equivalent to a 8-bit binary digital. DIP-8 is MSB while DIP-1 is LSB. The state "ON" of each bit means 1 while "OFF" means 0. Following table shows states of coding switches of some addresses.

Dome Address	Coding Switch Status							
	DIP-1	DIP-2	DIP-3	DIP-4	DIP-5	DIP-6	DIP-7	DIP-8
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
…	…	…	…	…	…	…	…	…
255	ON	ON	ON	ON	ON	ON	ON	ON

Table 1

For Example：
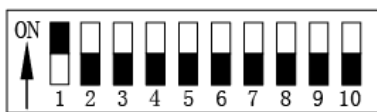
Speed Dome Address=1
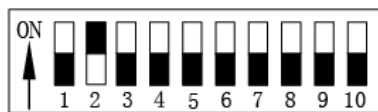
Speed Dome Address=2
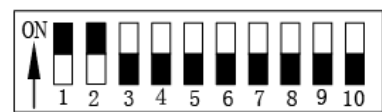
Speed Dome Address=3
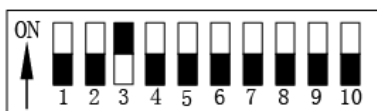
Speed Dome Address=4
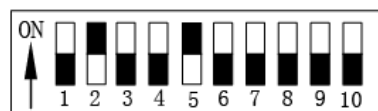
Speed Dome Address=18

3. Setup of the Baud Rate of Communication. As shown in figure 1, SW2 is used to set the protocol of communication and the baud rate used by the dome camera. DIP-6 and DIP-5 of SW2 are used to select the baud rate of communication and 3 different baud rates can be selected in maximum. If the controller adopts non-standard baud

rate, you can adjust it to be identical with that of the main machine as per the following table.

Baud Rate of Communication	DIP-1	DIP-2	DIP-3	DIP-4	Setup of baud rate	
					DIP-5	DIP-6
2400bps					ON	OFF
4800bps					OFF	ON
9600bps					ON	ON

Table 2

4. Soft address function, Baud rate function.

When 10 DIP are at "OFF" state, you can enter the menu setting soft address.

When 6 DIP are at "OFF" state, you can enter the menu to set the soft baud rate.

V. The Installation of the System
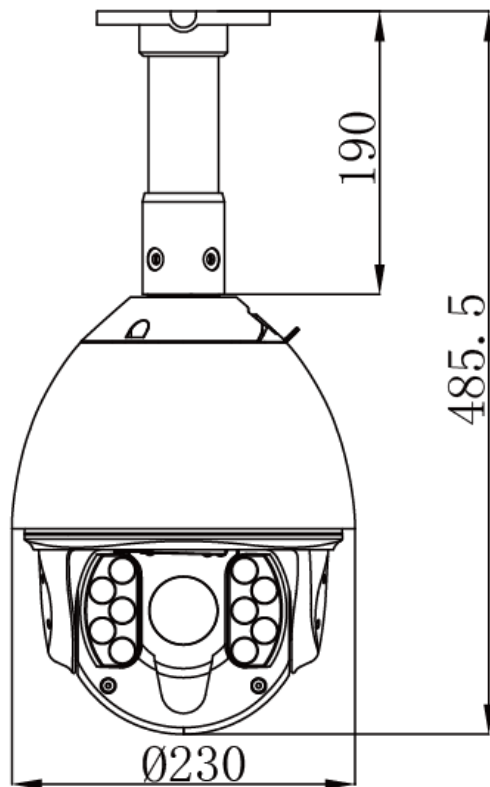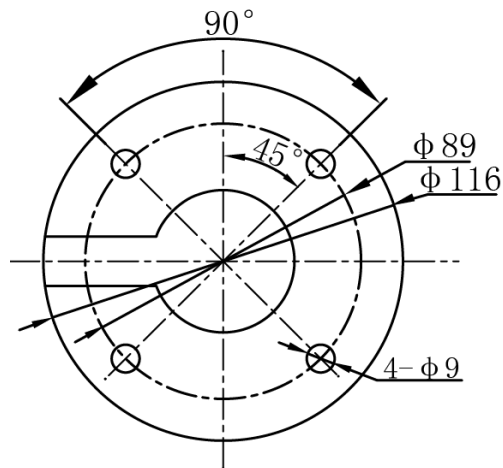
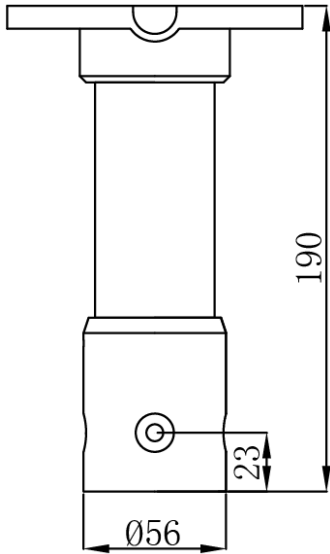1. **Installing way (Unit: mm)**

1）Dimension
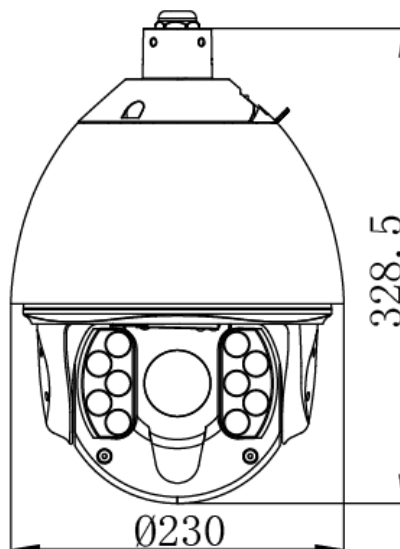
2) Wall dimension
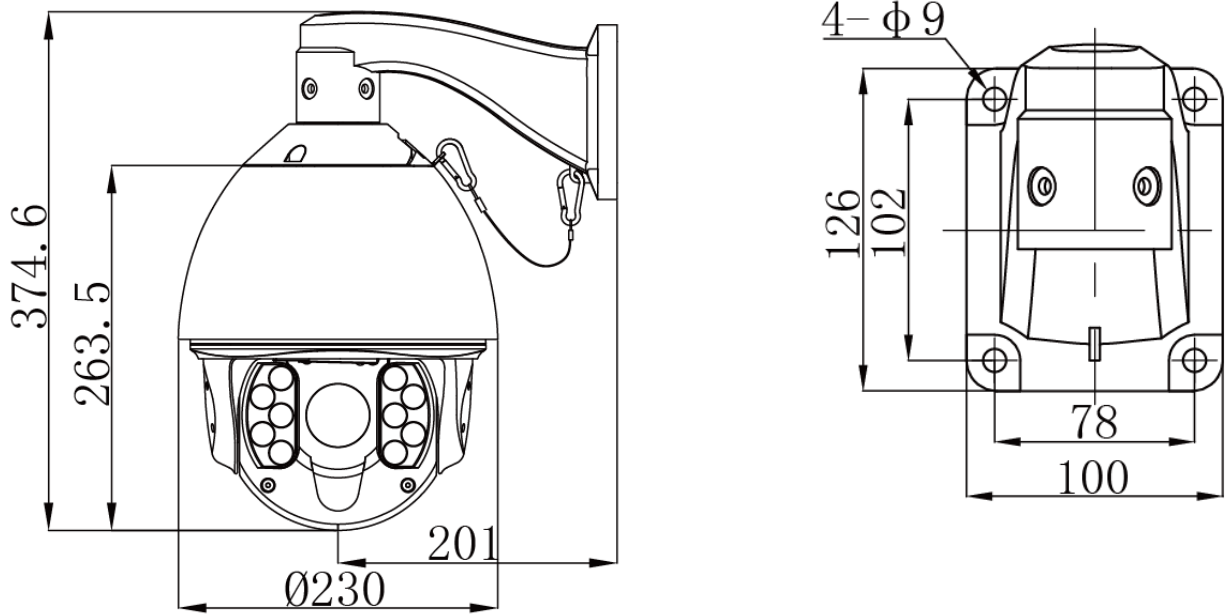
3）Ceiling dimension：

4）Ceiling bracket

2. Wall installing steps

⚠️Notes:

When you install the dome camera bracket, please don't pull the system wire, because the system wire can't withstand the total weight of the Dome.

1. Please carefully take out the dome and accessories from package.

2. Please note that if the baud rate and soft address of speed dome don't need to adjust,you can cancel step2、step3.

3. As figure 3 shows, please setup the related according to table 2 shows. And please ensure if the dome address is matched with your requiring address, if it's not matched; please setup according to the table 1.
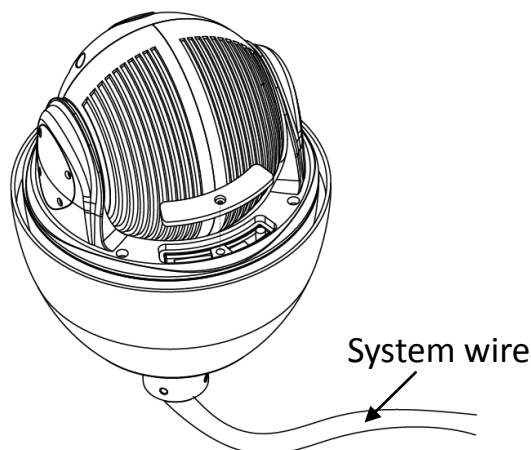

System wire

Figure 3

4. Select the mounting location and draw the hole on the mounting surface, loosen 2 pieces M4X15 screws of the dome and the flange, then open flange, remove the cable. Will be equipped with a dome integrated with cable flange mounted to the wall bracket, integrated bracket system cable through the dome, the dome flange snapping

direction to the arrow until the flange against the wall bracket and tighten 4pieces M6X12 stainless steel screws, as figure 4 shows.

Screw M6X12
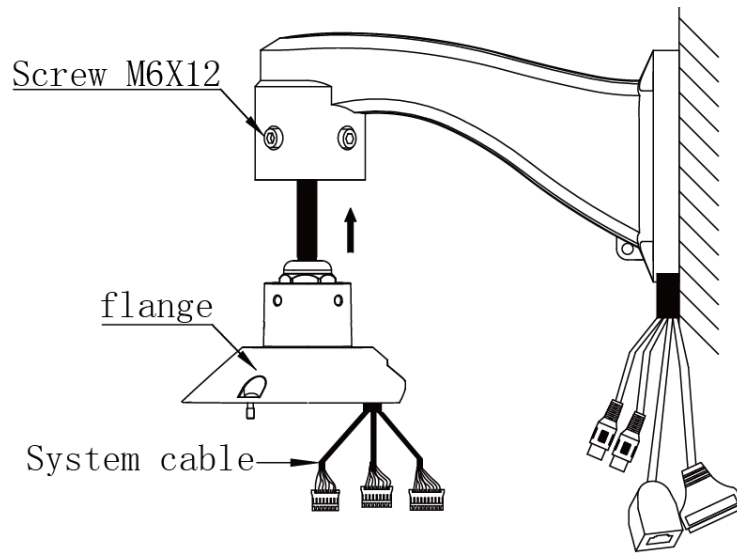
flange

System cable

Figure 4

5. Please insert the expansion screw into the hole, align the stand base hole with the mounting surface hole, put into the screw, and lock it. Anti-falling steel wire ropes with HD infrared speed dome and the wall bracket. Hold the dome with both hands as shown in the machine was 45 °tilt angle, the mounting rotating pendant dome is aligned with the rotation of the hook inside the buckle into the flange, as shown in figure 5.
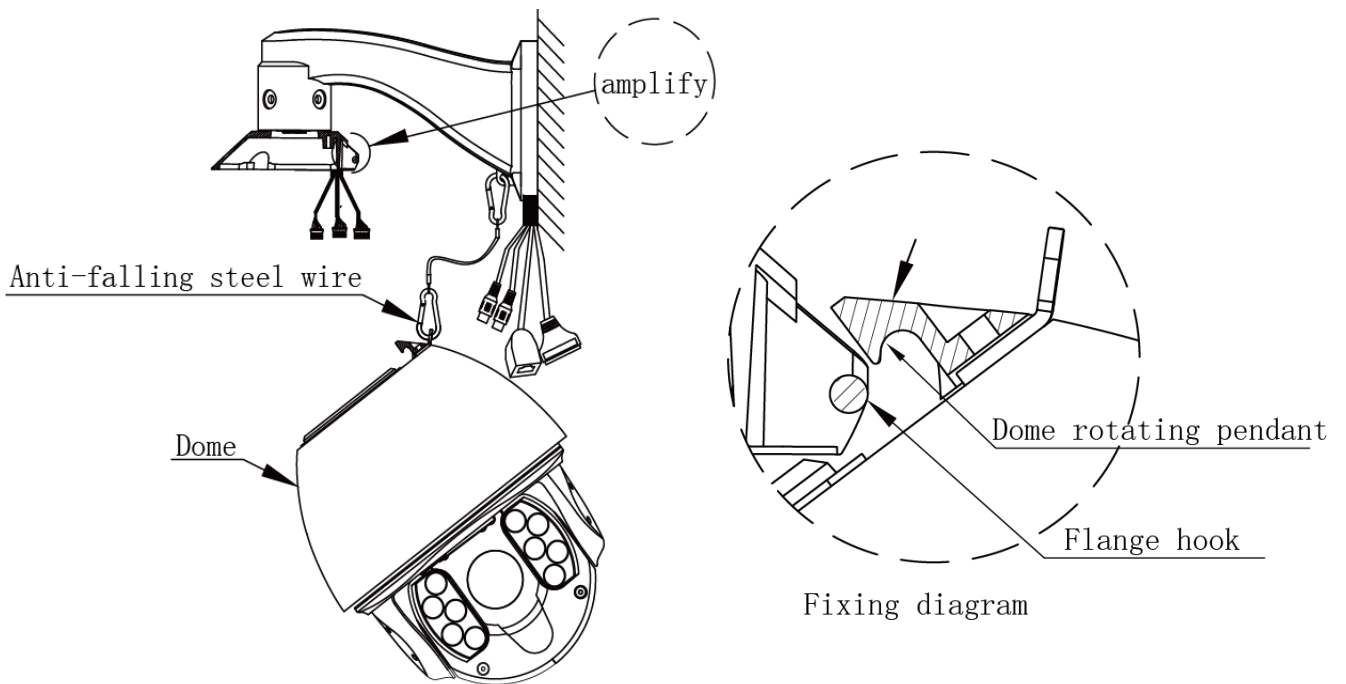
amplify

Anti-falling steel wire

Dome

Dome rotating pendant

Flange hook

Fixing diagram

Figure 5

3. In-ceiling installing steps:

⚠ **Notes:**

When you install the dome camera bracket, please don't pull the system wire, because the system wire can't withstand the total weight of the Dome.

1. Please carefully take out the dome and accessories from package.

2. Please note that if the baud rate and soft address of speed dome don't need to adjust,you can cancel step2、step3.

3. As figure 6 shows, please setup the related baud rate according to table 2 shows. And please ensure if the dome address is matched with your requiring address, if it's not matched; please setup according to the table 1.
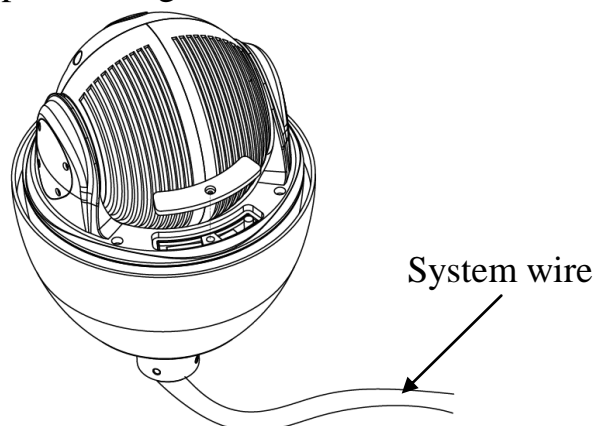

System wire

Figure 6

4. Select the mounting location and punch the hole on the mounting surface, loosen 2 pieces M4X15 screws of the mounting flange and the dome, open flange, remove the cable. Will be equipped with a dome integrated cable flange mounted to the ceiling mount bracket, the inside integrated cable of the dome through the ceiling bracket, let flange snapping direction to the arrow until it withstand the ceiling mount bracket, tighten the hexagon 4 pieces M6X12 stainless steel screws as shown in figure 7.

In-Ceiling bracket

M6x12 Screw
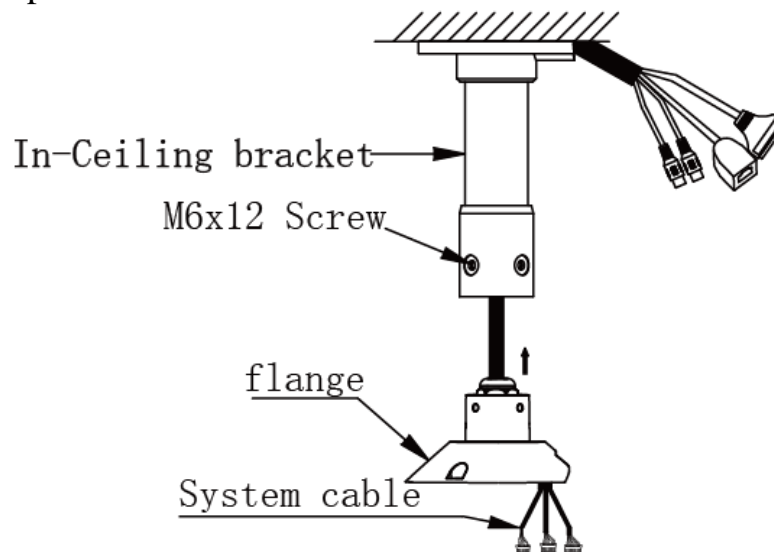
flange

System cable

Figure 7

5. Please insert the expansion screw into the hole, align the stand base hole with the mounting surface hole, put into the screw, and lock it. Hold the dome with both hands as shown in the machine was 45 °tilt angle, the mounting rotating pendant dome is aligned with the rotation of the hook inside the buckle into the flange, as shown in figure 8.

amplify

Dome rotating pendant
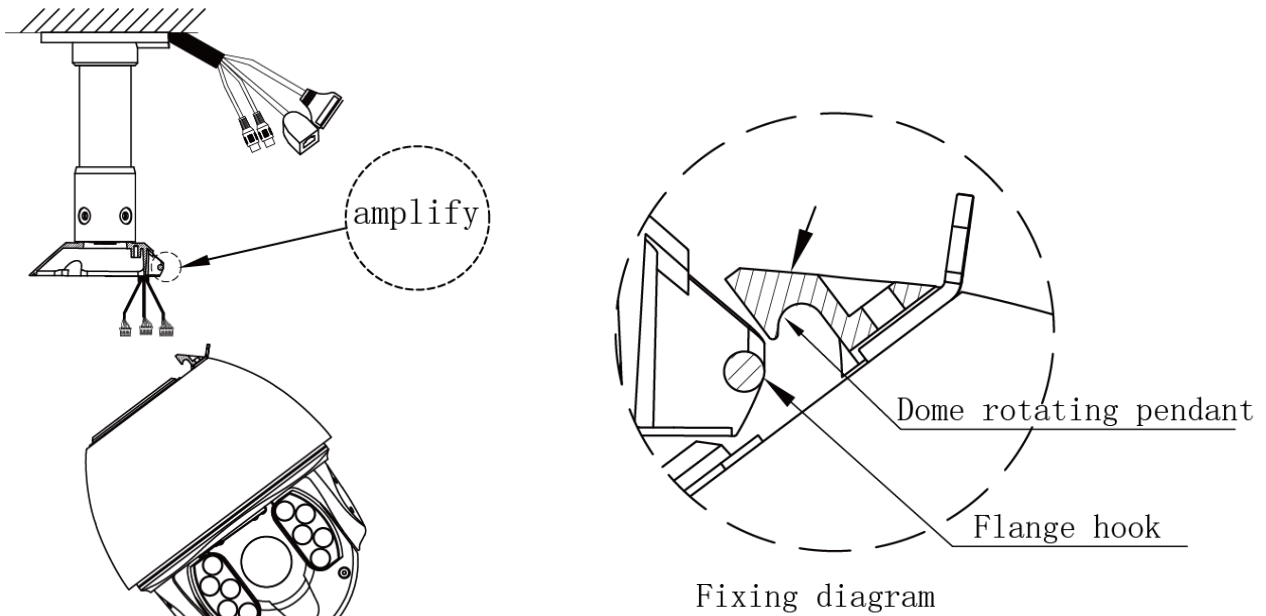
Flange hook

Fixing diagram

Figure 8

6. Please connect the system wire connector with the socket on the top of speed dome, after confirmation, please use both hands to hold the speed dome, speed dome flange and dome tight-fitting to prevent leaks, then please loosen the 2 pieces M4X15 tighten screws with screwdriver. As figure 9 shows.
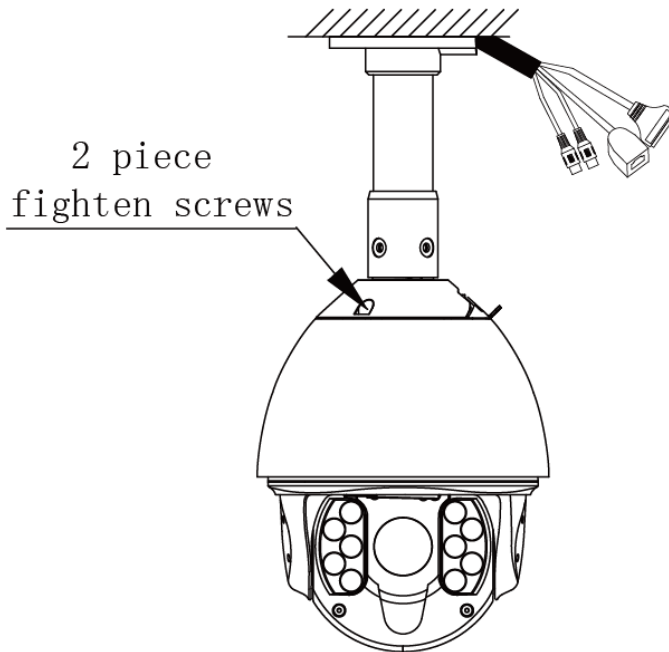

2 piece fighten screws

Figure 9

4. System wire descriptions as figure 10 shows.

BNC
9 pin：RS485+
10 pin：RS485-
11 pin：AC24V
12 pin：Earth
13 pin：AC24V
RJ45
Audio IN(Red)
Audio OUT(White)
1-4 pin---Alarm IN 1-4
5 pin---Alarm IN COM
6 pin---Alarm OUT COM
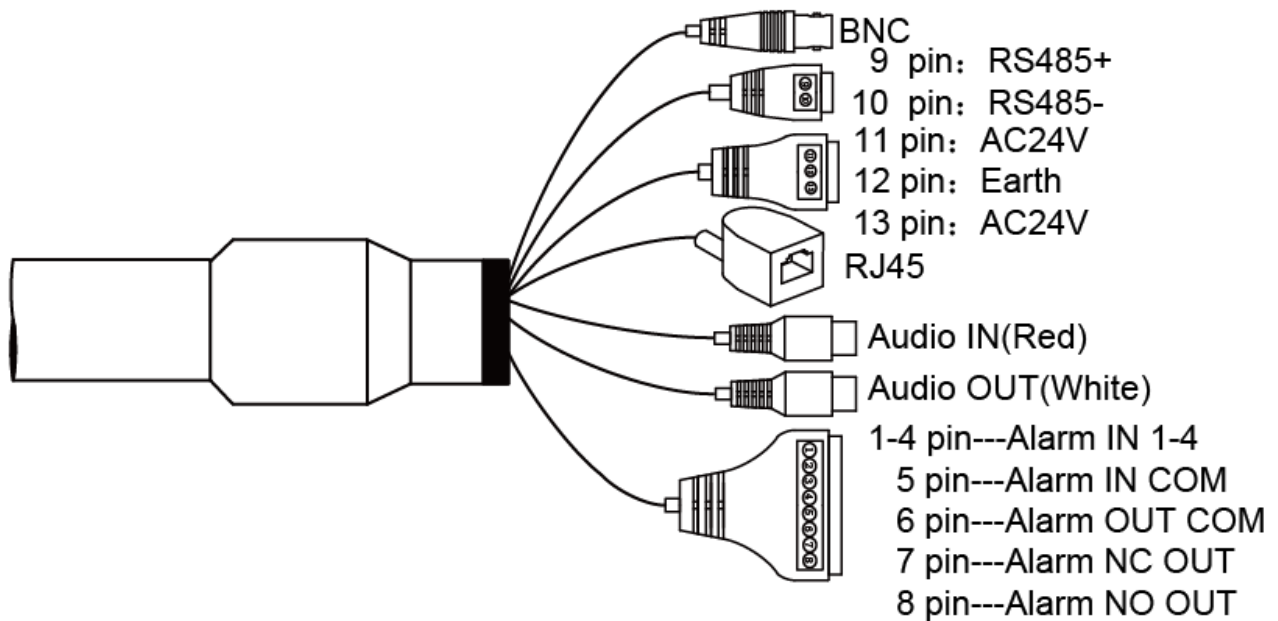7 pin---Alarm NC OUT
8 pin---Alarm NO OUT

Figure 10

5. Thoroughly review the project to ensure that all operations should meet or exceed the above requirements. Contact with the CCTV Project Coordinator to draw attention in case alleged discrepancies occur.

VI. Technical Parameter

Pan range	360 ℃continuously rotation
Pan speed	Pan control speed：0.1 °~260 °/s Pan preset speed：350 °/s
Tilt range	-10 °~ 90 °
Tilt speed	Tilt speed：0.1 °/s ~90 °/s, Tilt preset speed：120 °/s
Telephoto limit speed	Support
Preset positions	256
Cruising scanning	8, each with 16 preset positions
Scanning function	8, pattern direction and speed could adjust
Patterns	4 with 160 seconds
Memory after power off	Support
Home position	Presets /Tracking/ Pan scanning /Patterns
Coordination display	Support
Temperature display	Support

function	
Compass function	Support, the North direction could be setup
Menu	English
Power supply	AC24V/2.5A
Consumption	30W
Temperature and humidity	-30 ℃~ 55℃ humidity less than 90%
IP Grade	IP66(Outdoor)TVS 4000V lightning、 anti-surge protection
Installing way	Different installing ways accordingly
Weight	5kg