
IR Intelligent Speed Dome Installation Manual

Version 1.0.0

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Welcome

Thank you for purchasing our speed dome!

Please read the following safeguards and warnings carefully before you install or use the product!

Important Safeguards and Warnings

Safety Measures

1. Qualified Engineer Needed

- The installation engineer or maintenance engineer shall have corresponding CCTV system installation certificate or maintenance qualification certificate.
- The installation engineer or maintenance engineer shall have qualification certificate for work at height.
- The installation engineer or maintenance engineer shall have the basic knowledge and operation technique for low-voltage cable layout and low-voltage electronic cable connection.
- Please read the installation manual carefully and keep it well for future reference,
- We are not liable for any problems caused by unauthorized modifications or attempted repair.

2. Lifting Appliance Requirement

-
- Please select the proper speed dome installation mode and use the lifting appliances at the safety environment.
 - The lifting appliances shall have the enough capacity to reach the installation height.
 - The lifting appliances shall have safe performance.

The precaution measures include two types: Warning and Note.

- **Warning:** It is to alert you there is an optional risk of death or series injury!
- **Note:** It is to alert you there is an optional risk of damage or property loss!

Warning

1. All installation and operation here should conform to your local electrical safety codes. We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.
2. Be sure to use all the accessories (such as power adapter) recommended by manufacturer.
3. Do not connect several speed domes to one power adapter. It may result in overheat or fire if it exceeds the rated load.
4. Before you connect the cable, install or uninstall, or begin the daily maintenance work, please turn off the power and unplug the power cable.
5. Please make sure the produce is secure firmly on the wall or the ceiling.
6. Please turn off the power and unplug the power cable, If there is any smoke, disgusting smell, or noise. Please contact your local retailer or customer service centre for help.
7. All the examination and repair work should be done by the qualified service engineers. We are not liable for any problems caused by unauthorized modifications or attempted repair.

Note

1. Safety Transportation

- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- This series product must use split type package during the transportation.
- We are not liable for any damage or problem resulting from the integrated package during the transportation.

2. When device is malfunction

Shut down the device and disconnect the power cable immediately if there is smoke, abnormal smell or abnormal function. Please contact your local retailer ASAP.

3. Do not try to dismantle or modify the device

- There is risk of personal injury or device damage resulting from opening the shell.
- Please contact your local retailer if there is internal setup or maintenance requirement.

-
- We are not liable for any problems caused by unauthorized modifications or attempted repair.

4. Do not allow other object falling into the device

- Please make sure there is no metal or inflammable, explosive substance in the speed dome.
- The above mentioned objects in the device may result in fire, short-circuit or damage.
- Please shut down the device and disconnect the power cable if there is water or liquid falling into the camera. Please contact your local retailer ASAP.
- Please pay attention to the camera. Avoid the sea water or rain to erode the camera.

5. Handle carefully

Do not allow this series product fall down to the ground.

Avoid heavy vibration.

6. Installation Environment Requirement

- This series speed dome should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.
- This series product shall be away from the strong electromagnetism radiant, please keep it away from wireless power, TV transmitter, transformer and etc.

7. Daily Maintenance

- Please use the soft cloth to clean dust on the shell, or you can use soft cloth with cleaning liquid to clean the shell and then use soft cloth to make it dry.
- Do not use gasoline, dope thinner or other chemical material to clean the shell. It may result in shell transfiguration or paint flake.
- Do not allow the plastic or rubber material to touch the shell for a long time. It may result in paint flake.

CAUTION

- The environment is required $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ (IR OFF) / 45°C (IR ON)
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions risk.

2 INTELLIGENT SPEED DOME INSTALLATION

PREPARATION

2.1 Basic Requirement

- All installation and operation here should conform to your local electrical safety codes.
- Before installation, please open the package and check all the components are included. Please make sure the speed dome installation environment and installation mode can meet your requirement. If there is special requirement, please contact your local retailer for more information.
- We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

2.2 Check installation space and installation location intension

Please make sure the installation environment has enough space to install the speed dome and its corresponding bracket.

Please make sure the ceiling, wall and the bracket can support the speed dome and its corresponding installation component. It shall sustain the 8X weight of the speed dome.

2.3 Please keep all package material well for future use

Please keep speed dome package material well in case you need to send it back to your local retailer or manufacturer for maintenance work.

Non-original package material may result in device damage during the transportation.

3 SETUP BEFORE INSTALLATION

3.1 Check Accessories

Before the installation, please check the accessories one by one according to the packing list. Please make sure all the components listed are included.

3.2 Open Device

Remove the package and then take out the device. See Figure 3-1.



Figure 3-1

3.3 About Ceiling Installation Position Map

The ceiling installation position map is to define hard ceiling holes position and cable exit position. The beeline part is the mechanical blind spot. Please paste it according to your actual requirement to avoid mechanical blind spot. See Figure 3-2.

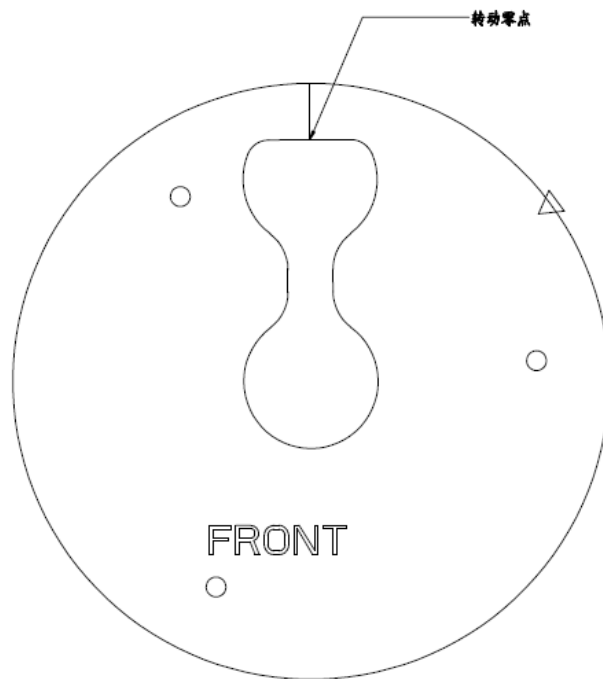


Figure 3-2

3.4 Dial Switch Setting (Analog Speed Dome, HDCVI Intelligent Speed Dome)

Open the cover of the pedestal, then you can see there are two dial switches on the PTZ which are used to set terminal matched resistance. Please refer to Figure 2-3 and Figure 2-4 for more information

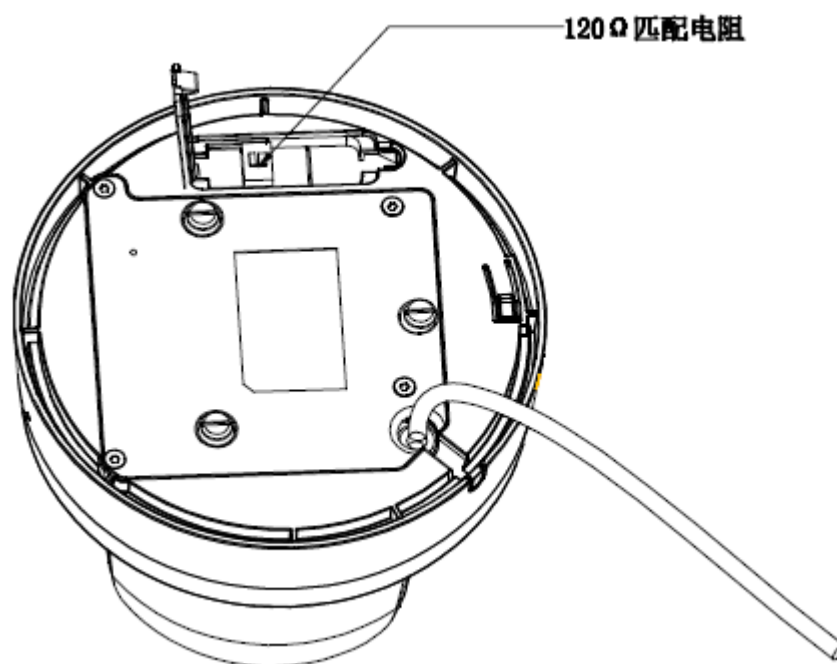


Figure 2-3

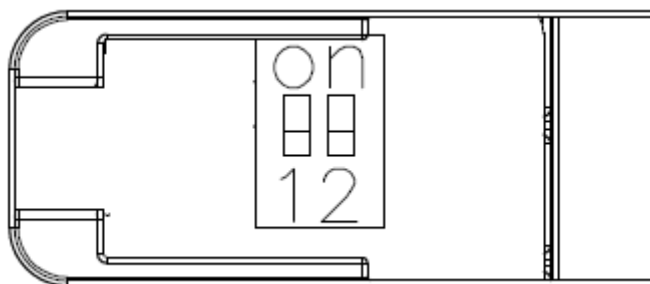


Figure 2-4

120Ω terminal resistance is available on the power panel, different dial switch modes are consistent with corresponding terminal resistance access status, please see sheet 3-1 for more information.

| 1 | 2 | Terminal Resistance Access Status |
|-----|-----|-----------------------------------|
| OFF | OFF | OFF |
| ON | OFF | ON |
| OFF | ON | ON |
| ON | ON | ON |

Sheet 3-1

3.5 TF Card Slot and Reset Button

TF card slot and RESET button is shown as in Figure 3-5.

Press the RESET button for at least five seconds; you can restore factory default setup.

Press the WPS button on the speed dome and the router at the same time. The speed dome can automatically connect to the network.

Before you remove the SD card, please make sure it is not in read/write status; otherwise you may lose data or result in SD card damage.

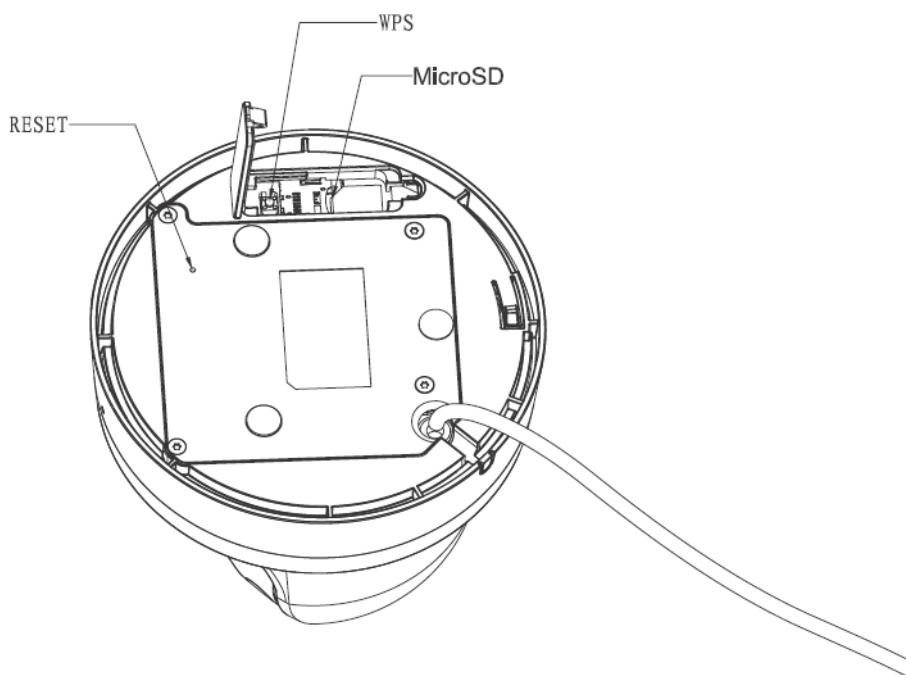


Figure 3-5

4 CEILING INSTALLATION

4.1 Installation Components

The ceiling installation dome body is shown as in Figure 4-1.

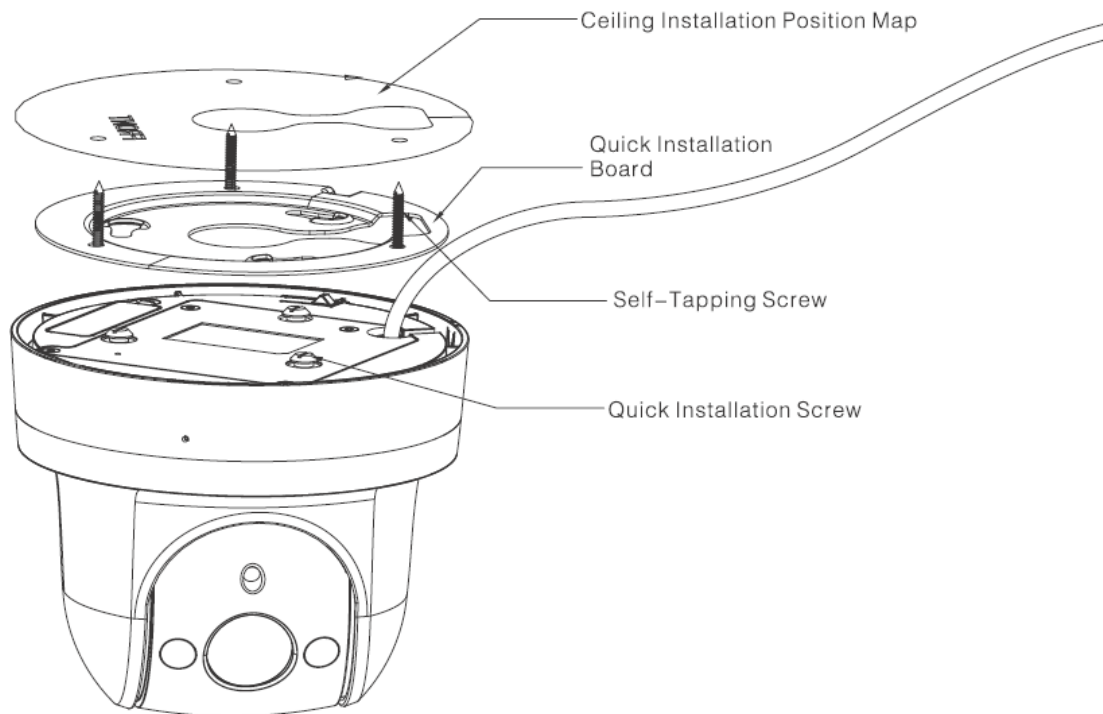


Figure 4-1

4.2 Ceiling Installation Steps

4.2.1 Installation Requirements

The ceiling mount speed dome can be installed in the hard construction wall in the indoor environments. Before the installation, please make sure:

- The wall is thick enough to install the expansion bolt.
- The wall can at least sustain the 8x weight of the speed dome.

4.2.2 Installation Steps

- 1) The ceiling installation has two cable exit modes: One is to pull the cable through the side cable exit of the speed dome without dig holes on the ceiling. The other is to dig holes on the ceiling and pull the cable through the ceiling.
- 2) Confirm installation position and cable exit mode. Use the ceiling installation position map to dig holes on the ceiling and then put the three plastic expansion bolts firmly.
- 3) Turn three quick installation screws to the screw holes at the bottom of the pedestal. Pull the cable through according to your cable exit mode. Use three self-tapping screws to secure the sheet metal on the ceiling. Insert the screws to the expansion bolts. See Figure 4-2.

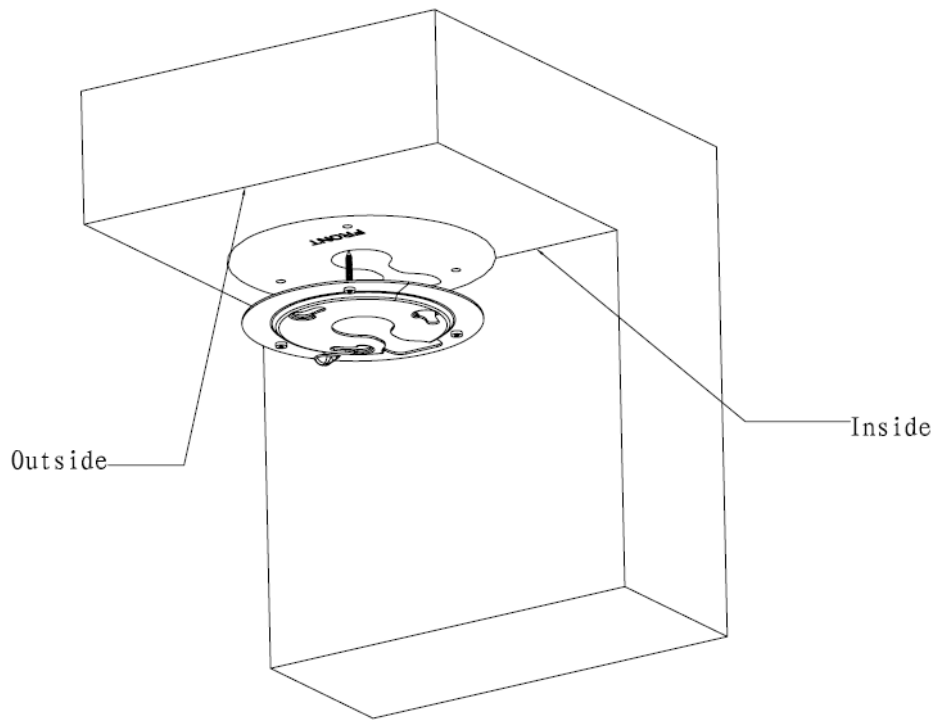


Figure 4-2

- 4) In Figure 4-3, line up the three quick installation screws at the bottom of the pedestal and the concave to the three holes and the U slot at the sheet metal respectively. Turn counter clockwise to secure the speed dome and the sheet metal closely.

Note

When the arrow of the ceiling installation position turns to the character “open” at the side of the speed dome, you can see the speed dome and then sheet metal are closely secured.

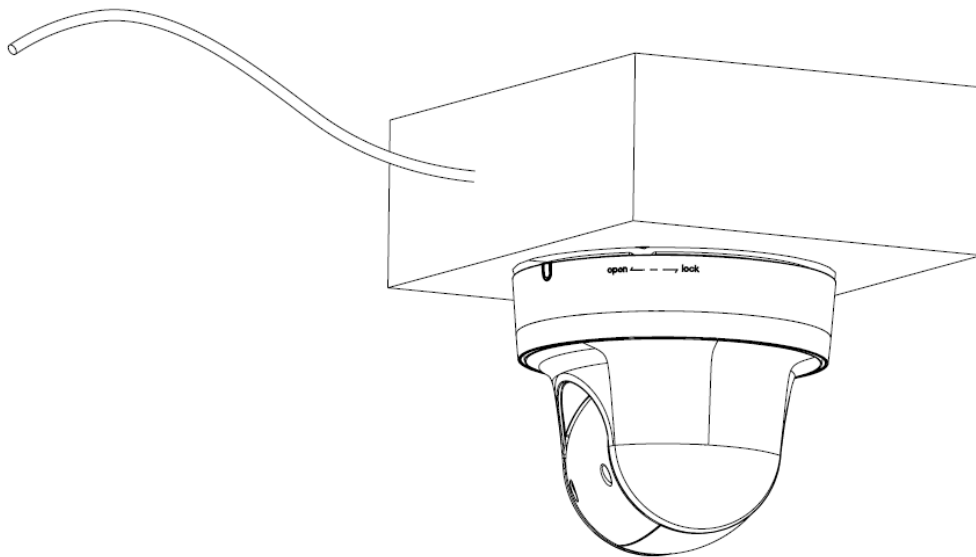


Figure 4-3

5 WALL MOUNT BRACKET INSTALLATION

5.1 Component Installation

Wall mount bracket is shown as below. See Figure 5-1.

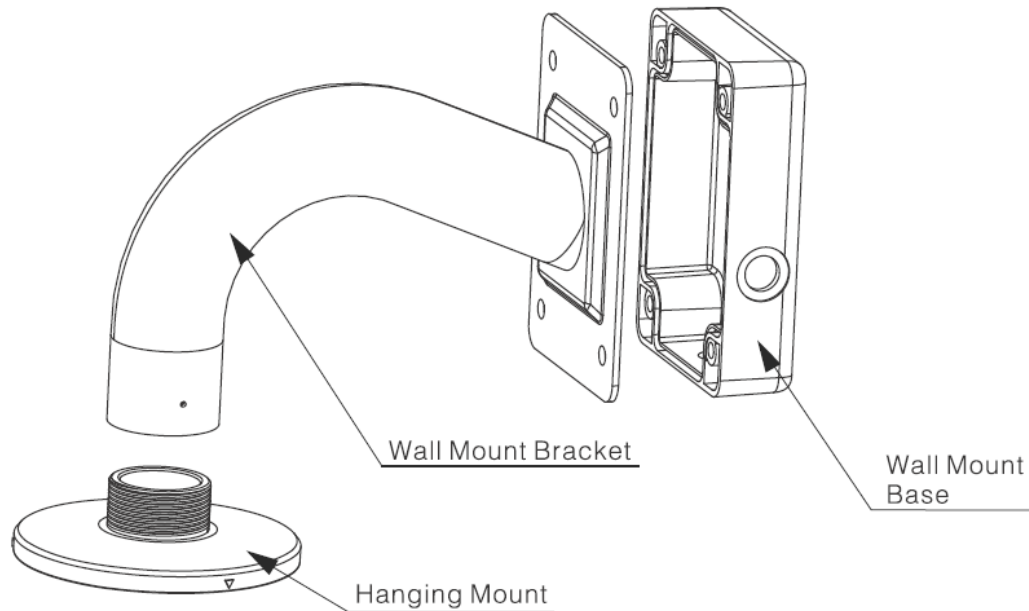


Figure 5-1

5.2 Installation

5.2.1 Installation Requirements

The wall mount speed dome can be installed in the hard construction wall in the indoor environments. Before the installation, please make sure:

- The wall is thick enough to install the expansion bolt.
- The wall can at least sustain the 8x weight of the speed dome.

5.2.2 Installation Steps

1). Please draw holes position in the wall according to the holes of the bottom of wall mount base. Then you can dig holes and insert the expansion bolts. Use four hex bolts and flat washer to fix the wall mount base in the expansion bolts. See Figure 5-2.

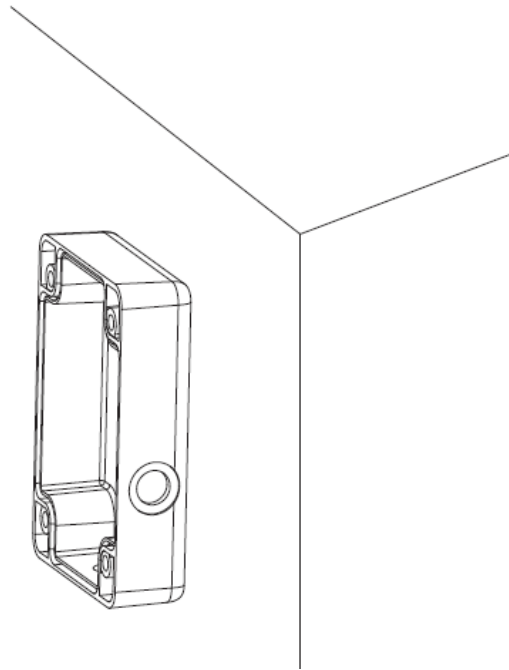


Figure 5-2

2). Connect the hanging mount to the internal thread of the wall mount bracket. Secure screws to the right side of the wall mount bracket to secure the hanging mount. **Please note this step is very important. Please make sure the screws are firm, otherwise, it may result in falling risk of the intelligent speed dome.** Use three self-captive screws to secure the sheet metal on the hanging mount. See Figure 5-3.

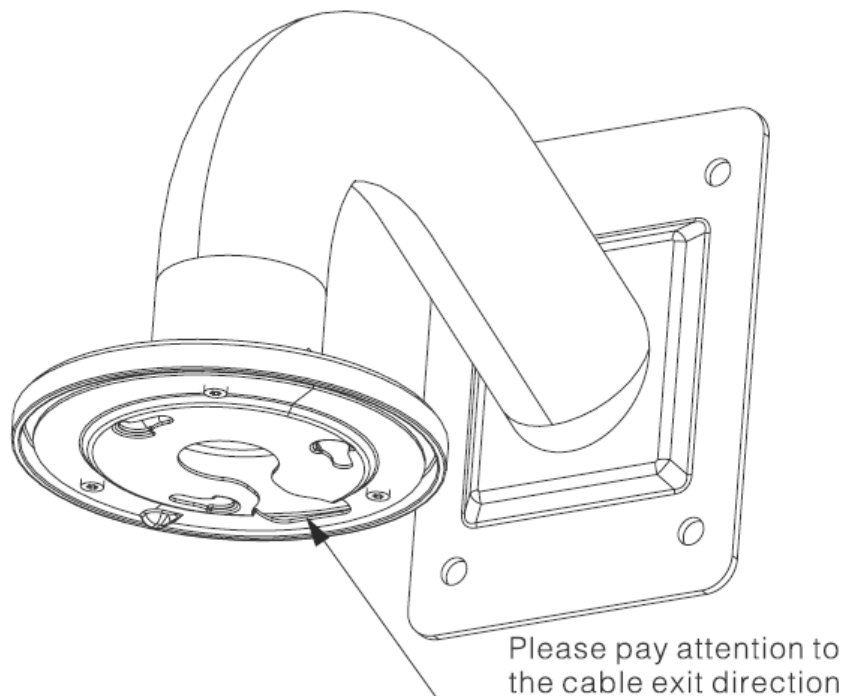


Figure 5-3

3) Insert three quick installation screws to the holes at the bottom of the pedestal. Pull the intelligent speed dome composite cable through the hanging mount and end of the column of the

wall mount bracket and pull it out of the other end of the wall mount bracket. Line up the three quick installation screws at the bottom of the pedestal and the concave to the three holes and the U slot at the sheet metal respectively. Turn counter clockwise to secure the speed dome and the sheet metal closely. See Figure 5-4.

Note

When the arrow of the ceiling installation position turns to the character “open” at the side of the speed dome, you can see the speed dome and then sheet metal are closely secured.

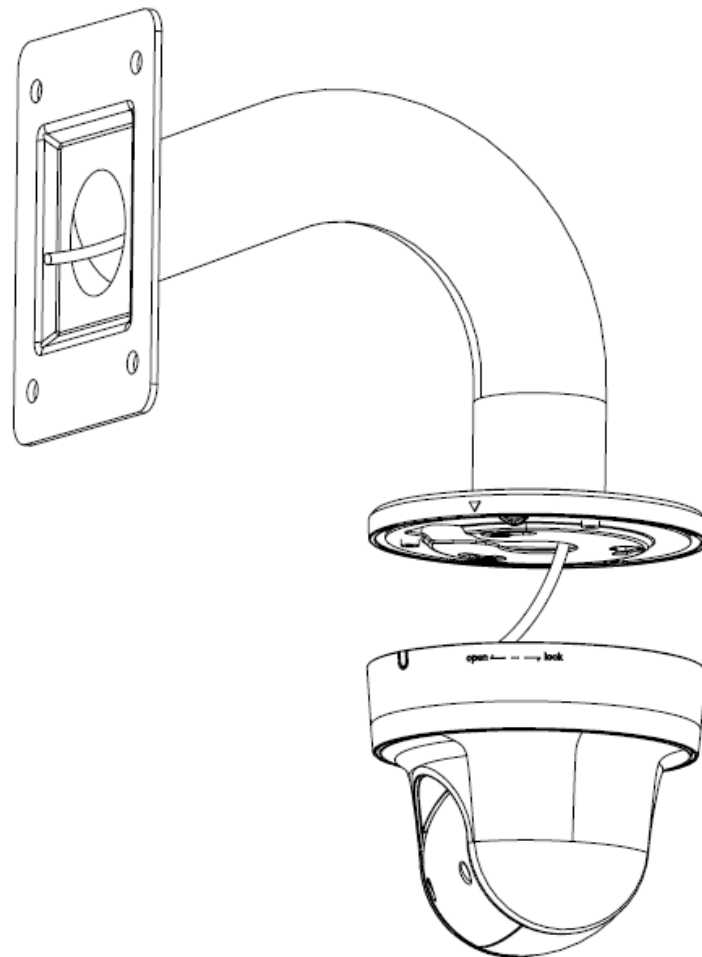


Figure 5-4

Connect cable connection at the wall mount base and then use four M8 screws to secure the wall mount bracket on the wall mount base. See Figure 5-5.

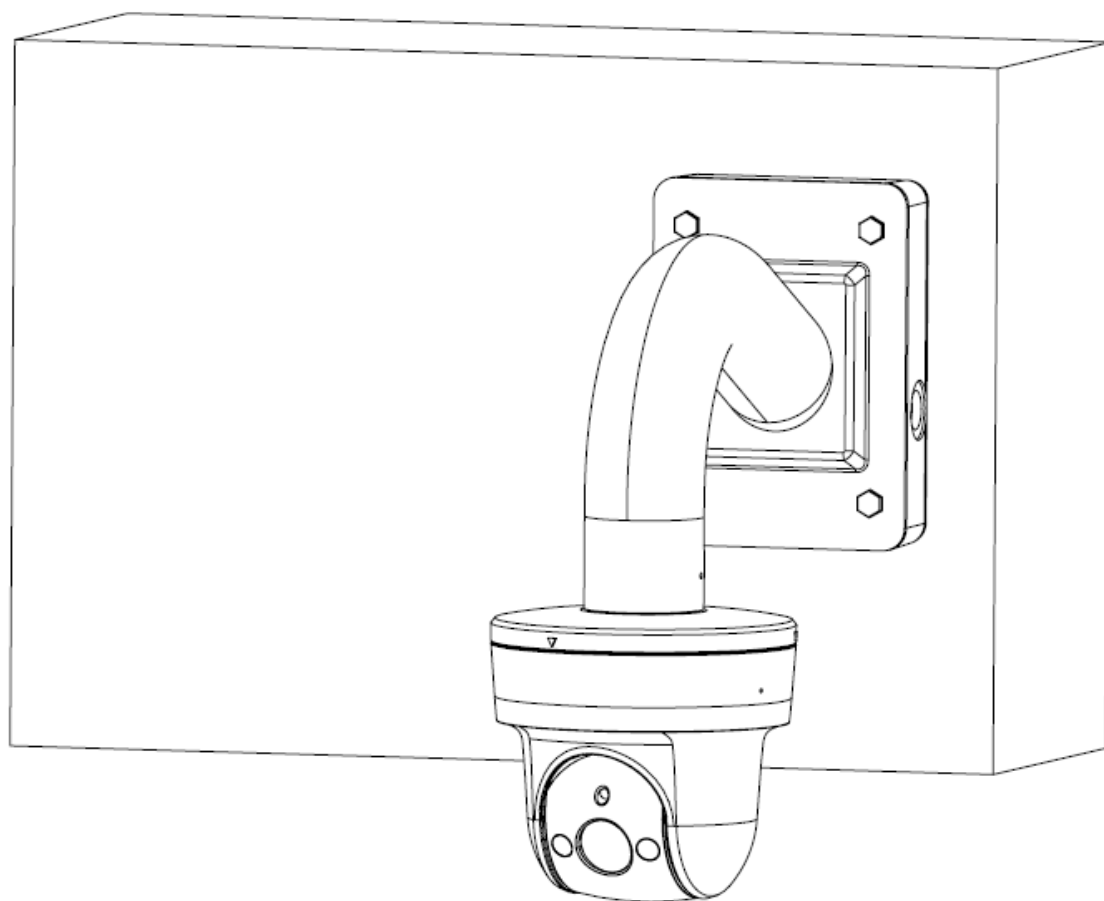


Figure 5-5

6 APPENDIX I LIGHTENING PROTECTION AND SURGE PROTECTION

This series speed dome adopts TVS lighting protection technology. It can effectively prevent damages from various pulse signals below 4000W, such as sudden lighting and surge. While maintaining your local electrical safety code, you still need to take necessary precaution measures when installing the speed dome in the outdoor environment.

- The distance between the signal transmission cable and high-voltage device (or high-voltage cable) shall be at least 50 meters.
- Outdoor cable layout shall go under the penthouse if possible.
- For vast land, please use sealing steel tube under the land to implement cable layout and connects one point to the earth. Open floor cable layout is forbidden.
- In area of strong thunderstorm hit or near high sensitive voltage (such as near high-voltage transformer substation), you need to install additional high-power thunder protection device or lightning rod.
- The thunder protection and earth of the outdoor device and cable shall be considered in the building whole thunder protection and conform to your local national or industry standard.
- System shall adopt equal-potential wiring. The earth device shall meet anti-jamming and at the same time conforms to your local electrical safety code. The earth device shall not short circuit to N (neutral) line of high voltage power grid or mixed with other wires. When connect the system to the earth alone, the earth resistance shall not be more than $4\ \Omega$ and earth cable cross-sectional area shall below $25\ \text{mm}^2$. See Figure 6-1.

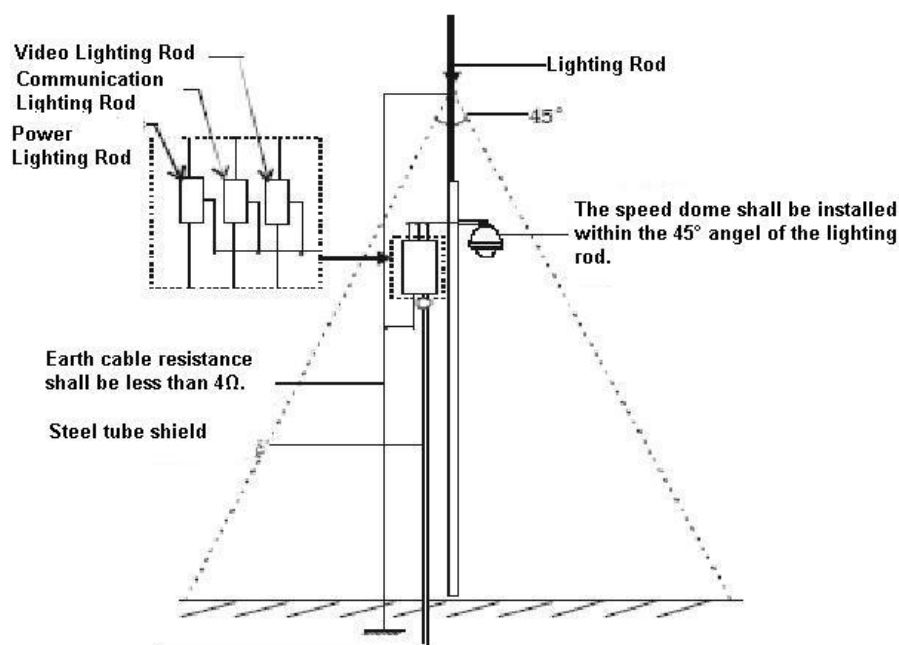


Figure 6-1

7 APPENDIX II 24V AC WIRE GAUGE AND

TRANSMISSION DISTANCE RELATIONSHIP SHEET

It is the recommended transmission distance when the cable diameter is fixed and the 24V AC power consumption is below 10%. For the AC device, the max permission voltage power consumption is 10%. For example, when a device of rated power 20W installed 141 inches (42m) from the transformer, then the min cable diameter is 0.8000mm.

| mm Feet (m) w | 0.8000 | 1.000 | 1.250 | 2.000 |
|---------------------|-----------------|-----------------|------------------|------------------|
| 5 | 488.52 (148.90) | 763.31 (232.66) | 1192.67 (363.53) | 3053.25 (930.63) |
| 10 | 244.26 (74.45) | 381.66 (116.33) | 596.34 (181.76) | 1526.62 (465.31) |
| 15 | 162.84 (49.63) | 254.44 (77.55) | 397.56 (121.18) | 1017.75 (310.21) |
| 20 | 122.13 (37.23) | 190.83 (58.16) | 298.17 (90.88) | 763.31 (232.66) |
| 25 | 97.70 (29.78) | 152.66 (46.53) | 238.53 (72.71) | 610.65 (186.13) |
| 30 | 81.42 (24.82) | 127.22 (38.78) | 198.78 (60.59) | 508.87 (155.10) |
| 35 | 69.79 (21.27) | 109.04 (33.24) | 170.38 (51.93) | 436.18 (132.95) |
| 40 | 61.06 (18.61) | 95.41 (29.08) | 149.08 (45.44) | 381.66 (116.33) |
| 45 | 54.28 (16.54) | 84.81 (25.85) | 132.52 (40.39) | 339.25 (103.40) |
| 50 | 48.85 (14.89) | 76.33 (23.27) | 119.27 (36.35) | 305.32 (93.06) |
| 55 | 44.41 (13.54) | 69.39 (21.15) | 108.42 (33.05) | 277.57 (84.60) |
| 60 | 40.71 (12.41) | 63.61 (19.39) | 99.39 (30.29) | 254.44 (77.55) |
| 65 | 37.58 (11.45) | 58.72 (17.90) | 91.74 (27.96) | 234.87 (71.59) |
| 70 | 34.89 (10.64) | 54.52 (16.62) | 85.19 (25.97) | 218.09 (66.47) |
| 75 | 32.57 (9.93) | 50.89 (15.51) | 79.51 (24.24) | 203.55 (62.04) |
| 80 | 30.53 (9.31) | 47.71 (14.54) | 74.54 (22.72) | 190.83 (58.16) |
| 85 | 28.74 (8.76) | 44.90 (13.69) | 70.16 (21.38) | 179.60 (54.74) |
| 90 | 27.14 (8.27) | 42.41 (12.93) | 66.26 (20.20) | 169.62 (51.70) |
| 95 | 25.71 (7.84) | 40.17 (12.25) | 62.77 (19.13) | 160.70 (48.98) |
| 100 | 24.43 (7.45) | 38.17 (11.63) | 59.63 (18.18) | 152.66 (46.53) |

8 APPENDIX III 12V DC WIRE GAUGE AND

TRANSMISSION DISTANCE RELATIONSHIP SHEET

The recommended max transmission distance is under the following environments: The wire diameter is fixed and the DC 12V power voltage loss rate is below 10%. For the device of DC power supplying, the max allowed voltage loss rate is 10%. All the wires listed in the following

sheet are copper wire. (Copper wire resistance $\rho = 0.0175\Omega \cdot \text{mm}^2/\text{m}$)

| <div> <div>mm</div> <div>Feet (m)</div> <div>w</div> </div> | 0.8000 | 1.000 | 1.250 | 2.000 |
|---|----------------|----------------|----------------|-----------------|
| 5 | 122.13 (37.23) | 190.83 (58.16) | 298.17 (90.88) | 763.31 (232.66) |
| 10 | 61.06 (18.61) | 95.41 (29.08) | 149.08 (45.44) | 381.66 (116.33) |
| 15 | 40.71 (12.41) | 63.61 (19.39) | 99.39 (30.29) | 254.44 (77.55) |
| 18 | 33.92 (10.34) | 53.01 (16.16) | 82.82 (25.24) | 212.03 (64.63) |
| 20 | 30.53 (9.31) | 47.71 (14.54) | 74.54 (22.72) | 190.83 (58.16) |
| 25 | 24.43 (7.45) | 38.17 (11.63) | 59.63 (18.18) | 152.66 (46.53) |
| 30 | 20.35 (6.20) | 31.80 (9.69) | 49.69 (15.15) | 127.22 (38.78) |
| 33 | 18.50 (5.64) | 28.91 (8.81) | 45.18 (13.77) | 115.65 (35.25) |
| 35 | 17.45 (5.32) | 27.26 (8.31) | 42.60 (12.98) | 109.04 (33.24) |
| 36 | 16.96 (5.17) | 26.50 (8.08) | 41.41 (12.62) | 106.02 (32.31) |
| 38 | 16.07 (4.90) | 25.11 (7.65) | 39.23 (11.96) | 100.44 (30.61) |
| 40 | 15.27 (4.65) | 23.85 (7.27) | 37.27 (11.36) | 95.41 (29.08) |
| 45 | 13.57 (4.14) | 21.20 (6.46) | 33.13 (10.10) | 84.81 (28.85) |
| 50 | 12.21 (3.72) | 19.08 (5.82) | 29.82 (9.09) | 76.33 (23.27) |
| 55 | 11.10 (3.38) | 17.35 (5.29) | 27.11 (8.26) | 69.39 (21.15) |
| 60 | 10.18 (3.10) | 15.90 (4.85) | 24.85 (7.57) | 63.61 (19.39) |
| 65 | 9.39 (2.86) | 14.68 (4.47) | 22.94 (6.99) | 58.72 (17.90) |
| 70 | 8.72 (2.66) | 13.63 (4.15) | 21.30 (6.49) | 54.52 (16.62) |
| 75 | 8.14 (2.48) | 12.72 (3.88) | 19.88 (6.06) | 50.89 (15.51) |
| 80 | 7.63 (2.33) | 11.93 (3.64) | 18.64 (5.68) | 47.71 (14.54) |
| 85 | 7.18 (2.19) | 11.23 (3.42) | 17.54 (5.35) | 44.90 (13.69) |
| 90 | 6.78 (2.07) | 10.60 (3.23) | 16.56 (5.05) | 42.41 (12.93) |
| 95 | 6.43 (1.96) | 10.04 (3.06) | 15.69 (4.78) | 40.17 (12.25) |
| 100 | 6.11 (1.86) | 9.54 (2.91) | 14.91 (4.54) | 38.17 (11.63) |

9 APPENDIX IV WIRE GAUGE REFERENCE SHEET

| Metric bare wire diameter (mm) | AWG | SWG | Bare wire cross section (mm ²) |
|--------------------------------|-----|-----|--|
| 0.050 | 43 | 47 | 0.00196 |
| 0.060 | 42 | 46 | 0.00283 |
| 0.070 | 41 | 45 | 0.00385 |
| 0.080 | 40 | 44 | 0.00503 |
| 0.090 | 39 | 43 | 0.00636 |
| 0.100 | 38 | 42 | 0.00785 |
| 0.110 | 37 | 41 | 0.00950 |
| 0.130 | 36 | 39 | 0.01327 |
| 0.140 | 35 | | 0.01539 |
| 0.160 | 34 | 37 | 0.02011 |
| 0.180 | 33 | | 0.02545 |
| 0.200 | 32 | 35 | 0.03142 |
| 0.230 | 31 | | 0.04115 |
| 0.250 | 30 | 33 | 0.04909 |
| 0.290 | 29 | 31 | 0.06605 |
| 0.330 | 28 | 30 | 0.08553 |
| 0.350 | 27 | 29 | 0.09621 |
| 0.400 | 26 | 28 | 0.1257 |
| 0.450 | 25 | | 0.1602 |
| 0.560 | 24 | 24 | 0.2463 |
| 0.600 | 23 | 23 | 0.2827 |
| 0.710 | 22 | 22 | 0.3958 |
| 0.750 | 21 | | 0.4417 |
| 0.800 | 20 | 21 | 0.5027 |
| 0.900 | 19 | 20 | 0.6362 |
| 1.000 | 18 | 19 | 0.7854 |
| 1.250 | 16 | 18 | 1.2266 |
| 1.500 | 15 | | 1.7663 |
| 2.000 | 12 | 14 | 3.1420 |
| 2.500 | / | / | 4.9080 |
| 3.000 | / | / | 7.0683 |

Note

- This manual is for reference only. Slight difference may be found in the user interface.
- All the designs and software here are subject to change without prior written notice.
- All trademarks and registered trademarks mentioned are the properties of their respective

owners.

- If there is any uncertainty or controversy, please refer to the final explanation of us.
- Please visit our website or contact your local service engineer for more information.
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference, and
 - (2) This device must accept any interference received, including interference that may cause undesired operation.
- Attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - —Reorient or relocate the receiving antenna.
 - —Increase the separation between the equipment and receiver.
 - —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - —Consult the dealer or an experienced radio/TV technician for help.
- Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
-