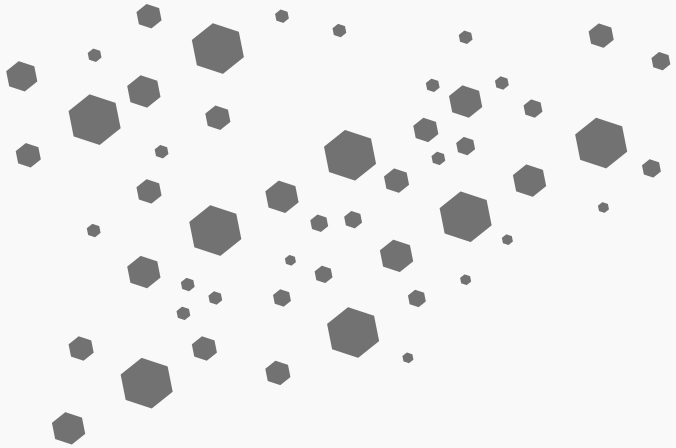
Outdoor Surveillance Box

User's Manual

V1.1.0



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Foreword

General

This manual introduces the functions and operations of the outdoor surveillance box (hereinafter referred to as the "Box").

Model

DH-PFA143

Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

Signal Words	Meaning
DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
NOTE	Provides additional information as the emphasis and supplement to the text.

About the Manual

- The manual is for reference only. If there is inconsistency between the manual and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the manual.
- The manual would be updated according to the latest laws and regulations of related jurisdictions. For detailed information, refer to the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the manual. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, we reserve the right of final explanation.

- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the manual are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problem occurs when using the device.
- If there is any uncertainty or controversy, please refer to our final explanation.

Important Safeguards and Warnings

The following contents are about the proper ways of using the Box, preventing dangers and property damage when it is in use. Read the manual carefully before using the Box, strictly abide by the manual and properly keep it for future reference.

- Do not place or install the Box in a place exposed to sunlight or near the heat source.
- Keep the Box away from dampness, dust or soot.
- Keep the Box installed horizontally on the stable place to prevent it from falling.
- Install the Box in a well-ventilated place, and do not block the ventilation of the Box.
- Operate the installed devices within the rated range of power input and output.
- Do not dissemble the Box arbitrarily.
- Transport, use and store the Box under the allowed humidity and temperature conditions.
- People working at heights must wear helmets and harnesses.
- Prepare heavy current wires, light current wires, grounding wires, and network cables as needed. Make sure that the wiring meets compliance.
- The Box should be installed in areas where the temperature is ⩽60°C (140°F). If the temperature is above 60°C (140°F), there must be sun shields or fans.

Table of Contents

Foreword **01**
Important Safeguards and Warnings **02**
1 Introduction **04**
1.1 Overview 04
1.2 Features 05
2 Unpacking the Box **06**
3 Structure **07**
3.1 Components 07
3.2 Dimensions 08
4 Installation **09**
4.1 Preparations 09
4.2 Solutions 09
4.3 Procedures 09
4.3.1 Disassembling the Mounting Board 09
4.3.2 Installing Devices inside the Box 11
4.3.3 Installing Devices outside the Box 15
4.3.4 Fixing the Devices 20
4.3.5 Commissioning 23

1 Introduction

1.1 Overview

This outdoor surveillance box can prevent internal installed components such as power supplies, mobile network video recorder (MNVR), surge protectors, and switches from weather influence. Multiple devices such as a speed dome, bullet cameras, and wireless devices can be installed outside the Box. It is time-saving and cost-effective with highly integrated and convenient installation solutions.

Figure 1-1 Appearance

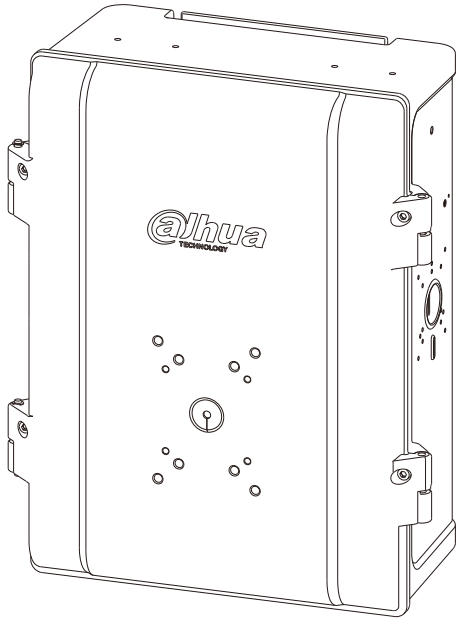
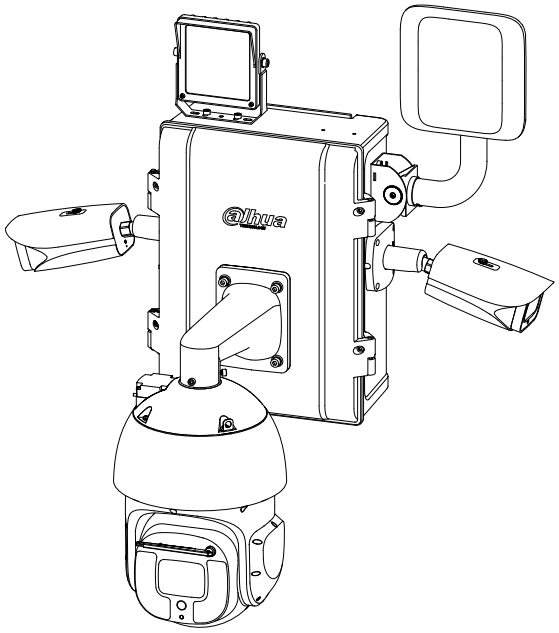


Figure 1-2 Application



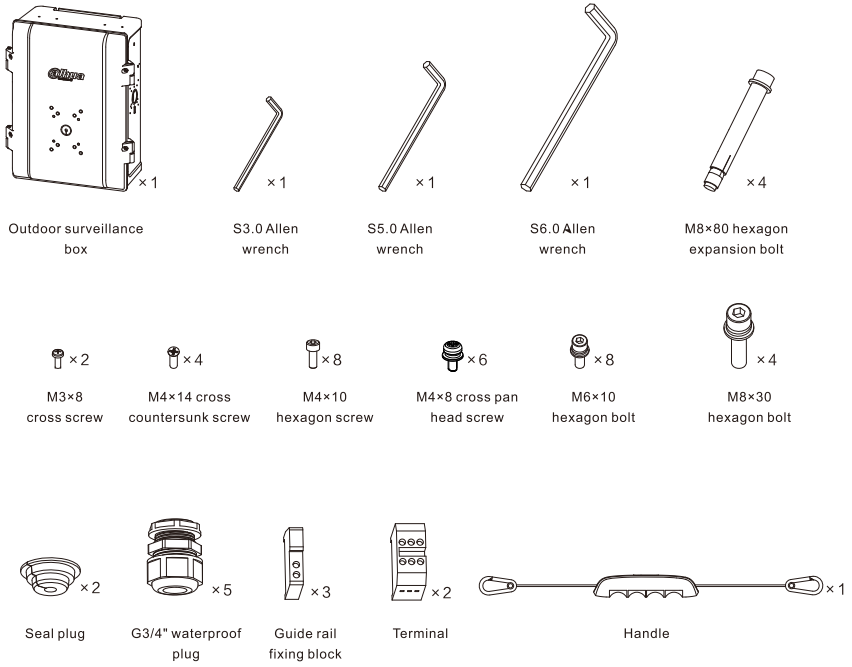
1.2 Features

- Aluminum hermetic casing, IP66 and IK10 rated.
- Tamper alarm from the alarm switch (optional) for any arbitrary unlocking, suitable for outdoor scenarios.
- With classified functional zones for heavy current, light current, data exchange and storage, and equipped with grounding wire and surge protectors, the Box is of great operability and safety.
- Two bullet cameras, one speed dome, one speaker, one illuminator, and two wireless devices can be installed on the Box simultaneously.
- Modular components installed inside to realize PoE power supply and data storage.
- Three-step installation: Install the mounting board, then the Box, and finally the front cover.
- Cooling fans are optional.

2 Unpacking the Box

After unpacking the box, check if there is obvious damage to the appearance of the Box, and make sure the components are complete against the packing list.

Table 2-1 Packing list



3 Structure

The following figures are for reference only, and the actual product shall prevail.

3.1 Components

Figure 3-1 Components

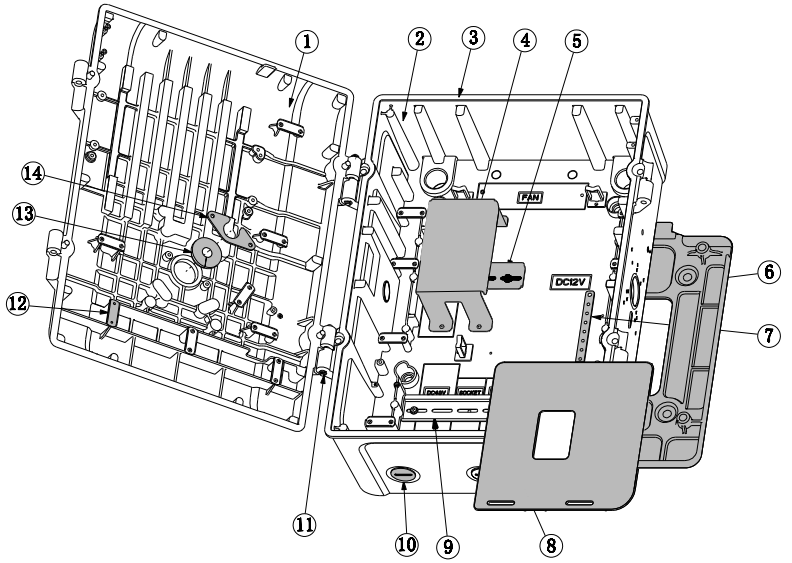


Table 3-1 Components description

No.	Name	No.	Name
1	Front cover	8	Cover for heavy current zone
2	Body of the Box	9	Lower guide rail
3	Seal ring	10	Waterproof plug
4	Fixing board of speed dome power supply	11	Rotating shaft
5	Upper guide rail	12	Wire clip
6	Mounting board	13	Seal plug
7	Grounding busbar	14	Cable clamp for speed dome

3.2 Dimensions

Figure 3-2 Dimensions (mm [inch])

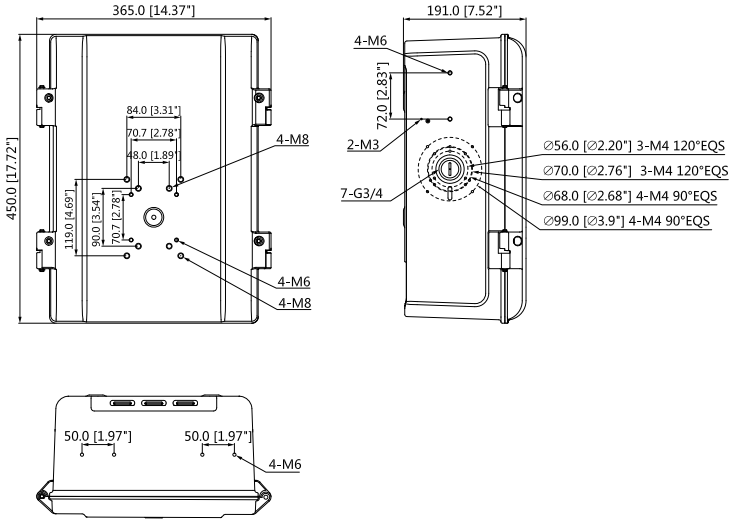
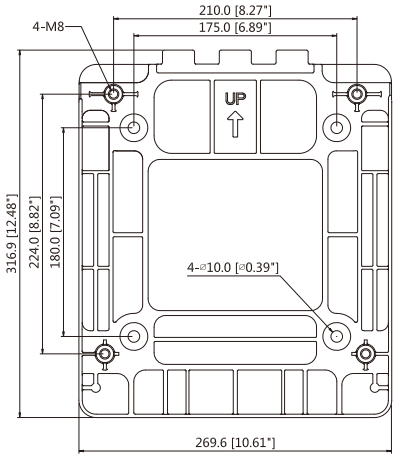


Figure 3-3 Holes on the mounting board (mm [inch])



4 Installation

4.1 Preparations

- Make sure that there is enough space for the Box and the installed devices.
- Make sure that the installation place can bear eight times the weight of the Box and the installed devices.

4.2 Solutions

Select installation solutions as needed.

- PoE solution: Provides power to cameras from the PoE switch.
- MNVR solution: Supports data storage.
- PoE + MNVR solution: Provides power to the speed domes from the PoE switch, and stores data in MNVR.

4.3 Procedure

The Box can be wall-mounted and pole-mounted. This manual takes pole mount as an example.

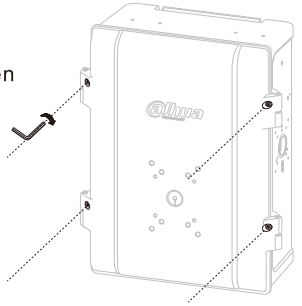
It is recommended to install all the needed devices and finish wiring inside the Box before fixing the Box to the pole or wall.

4.3.1 Disassembling the Mounting Board

Before installing devices on the Box, disassemble the mounting board.

Keep the removed screws and the mounting board well to be used later.

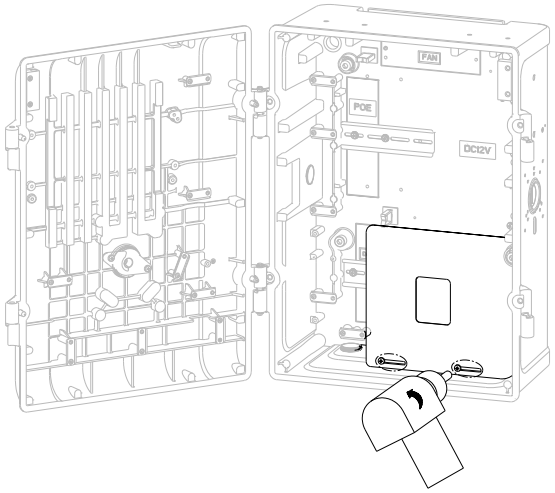
Figure 4-1 Open the Box



Step 1 Unscrew the screws on the two sides of the Box with S5.0 Allen wrench, and then remove the front cover.

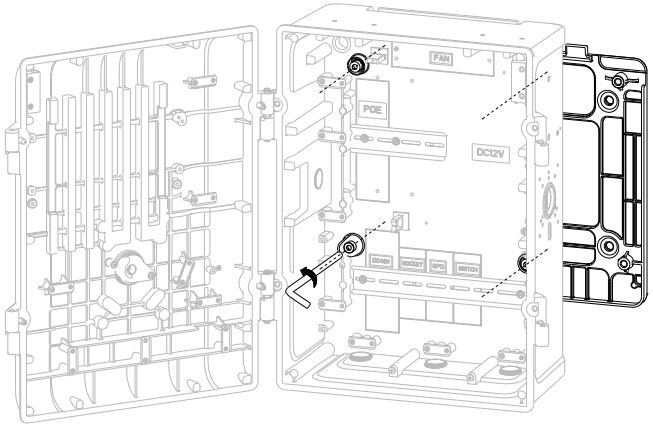
Step 2 Remove the cover for heavy current zone.

Figure 4-2 Remove the cover for heavy current zone



Step 3 Unscrew the screws on the mounting board which is installed on the rear of the Box with S6.0 Allen wrench, and then disassemble the board.

Figure 4-3 Disassemble the mounting board



4.3.2 Installing Devices inside the Box

4.3.2.1 PoE Solution

Figure 4-4 Installation in PoE solution (recommended)

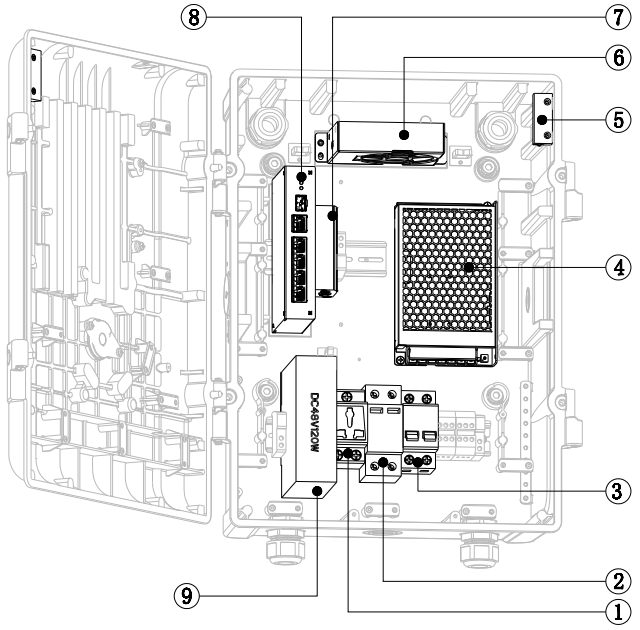
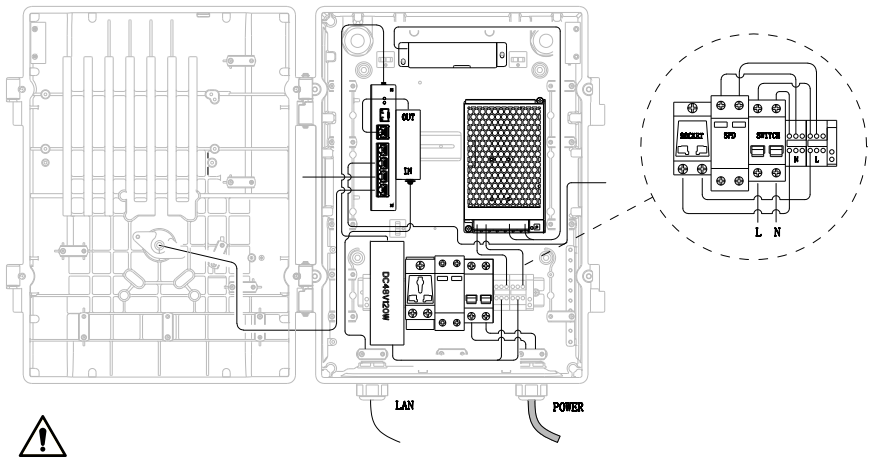


Table 4-1 Devices description

No.	Name	Model
1	Socket	–
2	Heavy current surge protector	ZZM3-20
3	Air switch	B1N2C16 or CDB6i2C20
4	Industrial power supply (1)	PFM320S-150 or PFM320S-50
5	Alarm switch	ARD312
6	Fan	PFC620-D1
7	Ethernet surge protector	ZZRJ45 or ZZRJ45-K
8	PoE switch	PFS4207-4GT-DP or PFS3106-4P-60
9	Industrial power supply (2)	DRL-48V120W1AAD

Figure 4-5 Wiring inside the Box



The speed dome can only be powered through HiPoE port on the PoE switch.

4.3.2.2 MNVR Solution

Figure 4-6 Installation in MNVR solution (recommended)

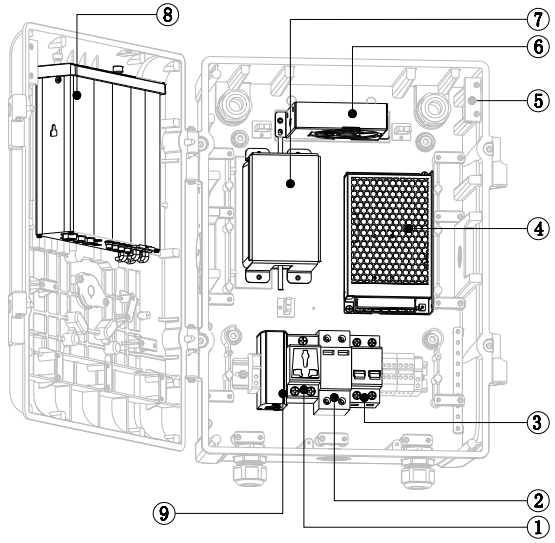
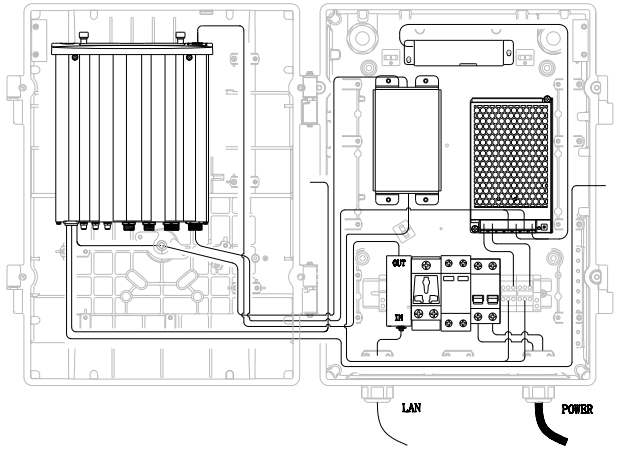


Table 4-2 Devices description

No.	Name	Model
1	Socket	–
2	Heavy current surge protector	ZZM3-20
3	Air switch	B1N2C16 or CDB6i2C20
4	Industrial power supply	PFM320S-150 or PFM320S-50
5	Alarm switch	ARD312
6	Fan	PFC620-D1
7	Power supply of the speed dome	24V AC 3A or 24V AC 1.5A
8	MNVR	MNVR4208 or MNVR4104
9	Ethernet surge protector	ZZRJ45 or ZZRJ45-K

Figure 4-7 Wiring inside the Box



- When powering the MNVR, you need to prepare a cable adapter. For details, refer to *MNVR User's Manual*.
- Bullet cameras can get PoE power supply from MNVR. If the power is insufficient, the camera needs 12V DC power from the industrial power supply.
- Connect the network cable to output signals as needed.
- The speed dome needs 24V AC power supply separately.
- Wireless devices are not supported in this solution.

4.3.2.3 PoE + MNVR Solution

Figure 4-8 Installation in PoE + MNVR solution (recommended)

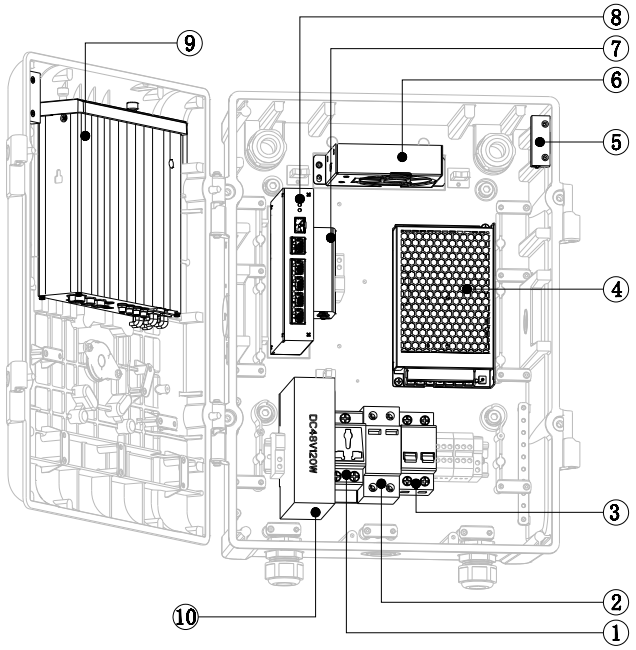
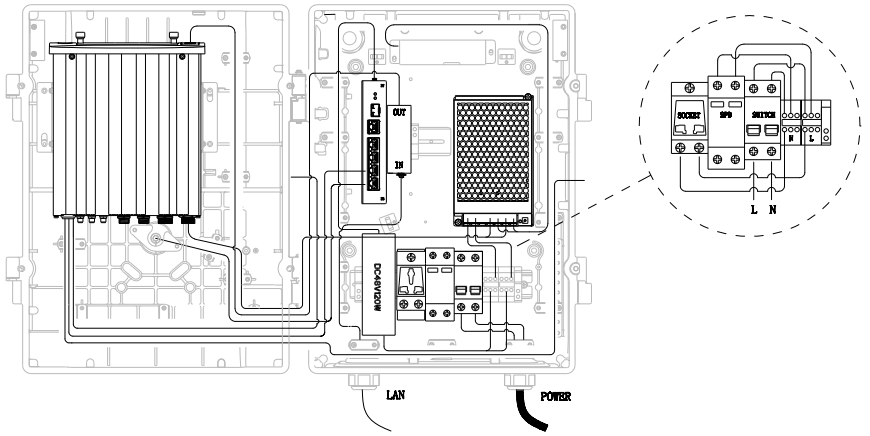


Table 4-3 Devices description

No.	Name	Model
1	Socket	–
2	Heavy current surge protector	ZZM3-20
3	Air switch	B1N2C16 or CDB6i2C20
4	Industrial power supply (1)	PFM320S-150 or PFM320S-50
5	Alarm switch	ARD312
6	Fan	PFC620-D1
7	Ethernet surge protector	ZZRJ45 or ZZRJ45-K
8	PoE switch	PFS4207-4GT-DP or PFS3106-4P-60
9	MNVR	MNVR4208 or MNVR4104
10	Industrial power supply (2)	DRL-48V120W1AAD

Figure 4-9 Wiring inside the Box



- The speed dome is powered through HiPoE port on the PoE switch.
- When powering the MNVR, you need to prepare a cable adapter. For details, refer to *MNVR User's Manual*.
- Bullet cameras can get PoE power supply from MNVR. If the power is insufficient, the camera needs 12V DC power from the industrial power supply.
- Wireless devices are powered by PoE switch.

4.3.3 Installing Devices outside the Box

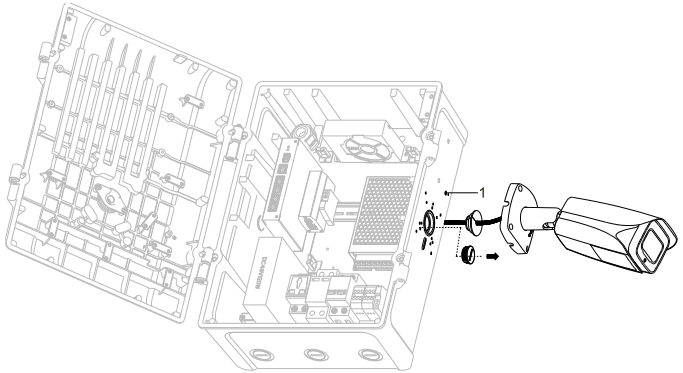
- At most two bullet cameras can be installed on the two sides of the Box, one for each.
- At most one illuminator and one speaker can be installed on the top of the Box.
- At most two wireless devices can be installed at the upper part of the left and right sides.
- This section takes wiring of PoE solution as an example. For wiring of other solutions, see "4.3.2 Installing Devices inside the Box."

4.3.3.1 Installing Devices outside the Box

Step 1 Take out the seal plug on one side of the Box.

Step 2 Fix wires of the bullet camera in the seam of the plug, and then thread wires through the hole.

Figure 4-10 Install the bullet camera



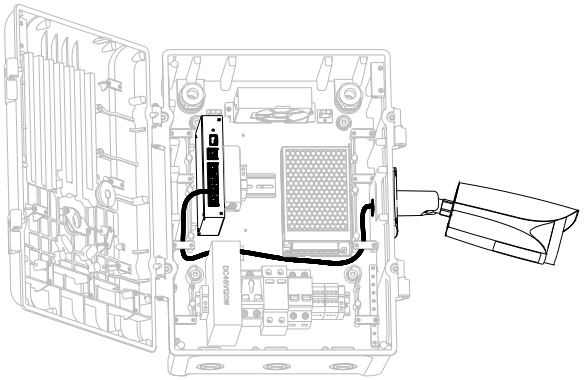
It is recommend to properly ground the bullet camera.

Table 4-4 Ground the bullet camera

No.	Description	Operation
1	Grounding screw for bullet camera	Unscrew the grounding screw, thread the grounding wire through the hole, and then fix it in the Box.

Step 3 Fix the bullet camera on the Box with M4×10 hexagon screws.
Step 4 Connect external wires of the camera as needed.

Figure 4-11 Connect bullet camera wires

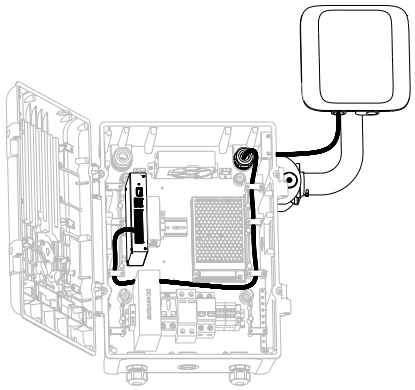


If wireless devices and illuminators are not needed, please block the corresponding wire holes with waterproof plugs (taken from the bottom of the Box).

4.3.3.2 Installing the Wireless Device

Step 1 Fix the wireless devices and its bracket on one side of the Box with M6×10 hexagon bolts.
Step 2 Thread the wire through the hole at the rear of the Box.
Step 3 Connect the wireless device to the PoE switch.

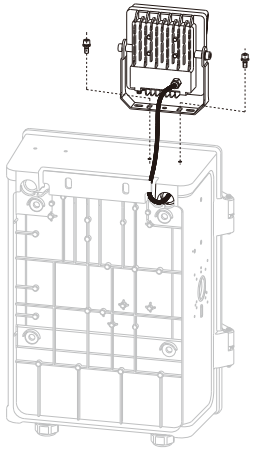
Figure 4-12 Install the wireless device



4.3.3.3 Installing the Illuminator

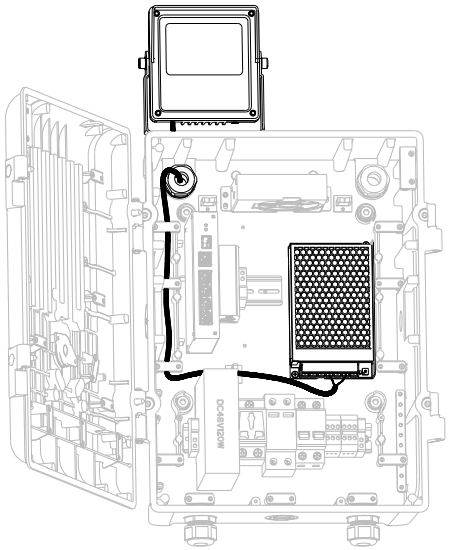
Step 1 Fix the illuminator on left or right side of the top of the Box with M6×10 hexagon bolts, and then thread the wire of the illuminator through the hole at the rear of the Box.

Figure 4-13 Install the illuminator



Step 2 Connect the illuminator to the industrial power supply.

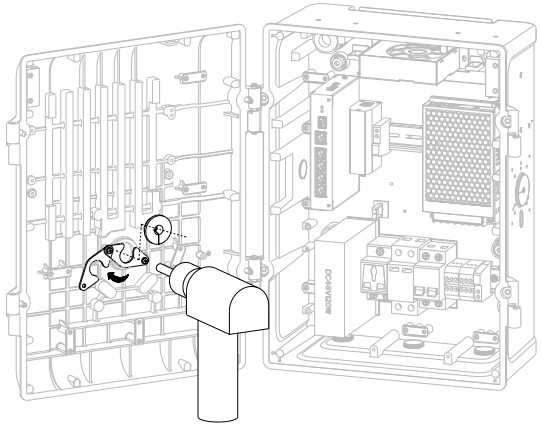
Figure 4-14 Connect the illuminator wires



4.3.3.4 Installing the Speed Dome

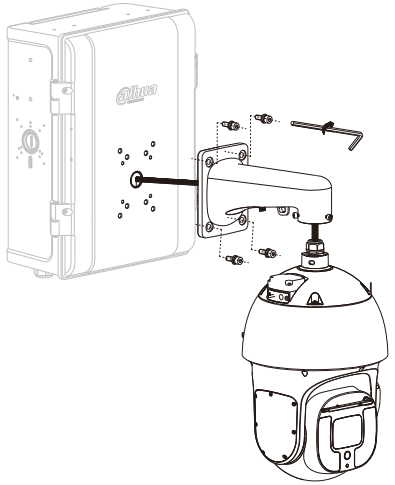
Step 1 Open the Box, move the clamp away, and then remove the seal plug.

Figure 4-15 Remove the seal plug



Step 2 Thread the speed dome wires through the hole, and then fix the camera and its bracket on the front of Box with S6.0 Allen wrench and M8×30 hexagon screws.

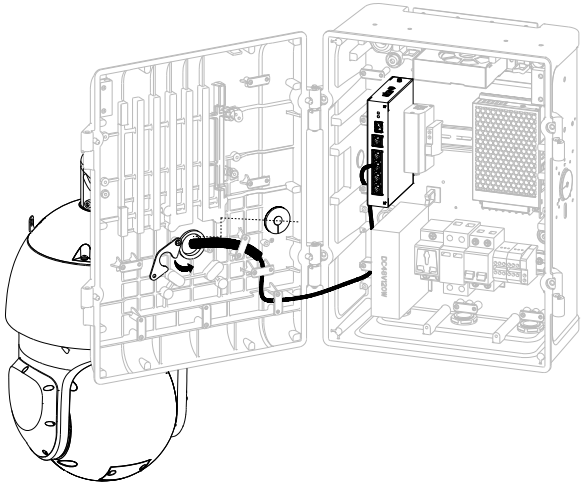
Figure 4-16 Install the speed dome



Step 3 Install the seal plug, fix the clamp, and then fix wires with clips.

Step 4 Connect the external wires of the camera as needed.

Figure 4-17 Connect external wires



Step 5 Tighten the screws on the edge of the Box with S5.0 Allen wrench.

Before you close the cover, check if the seal ring is correctly installed; otherwise the waterproof performance of the Box might be affected.

4.3.4 Fixing the Devices

WARNING

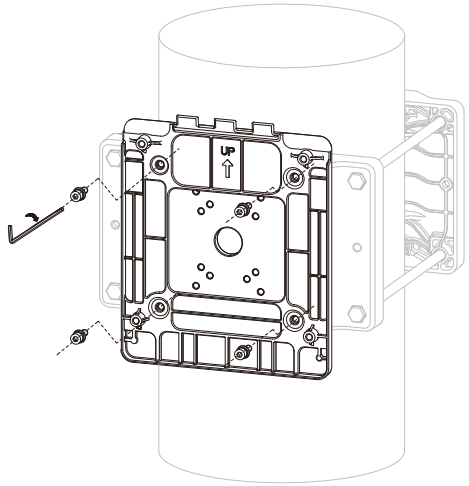
During installation, avoid objects from falling off such as devices, components and tools, so as not to hit people or else, damage devices, and lose components.

Step 1 Install the bracket on the pole. For detailed procedures, refer to *Bracket User's Manual*.

Step 2 Fix the mounting board (face upwards) on the bracket with screws.

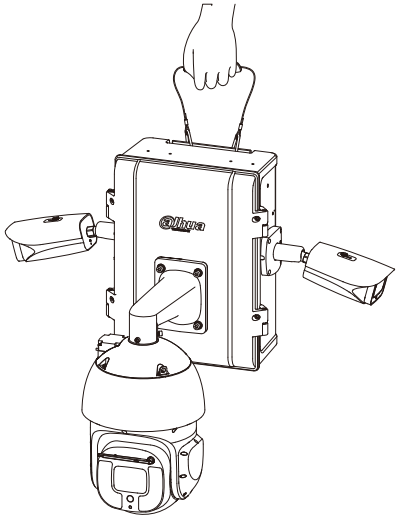
Make sure that the arrow on the mounting board faces upwards.

Figure 4-18 Fix the mounting board



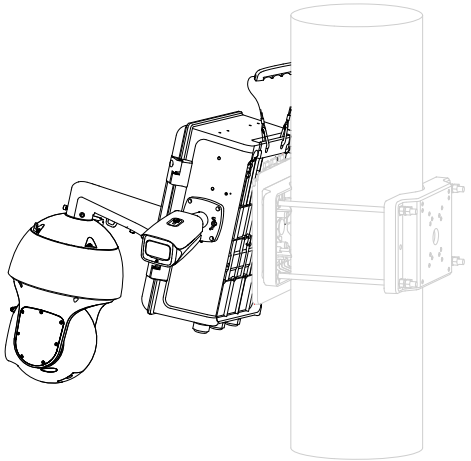
Step 3 Connect the handle to the Box with its hooks.

Figure 4-19 Connect the handle



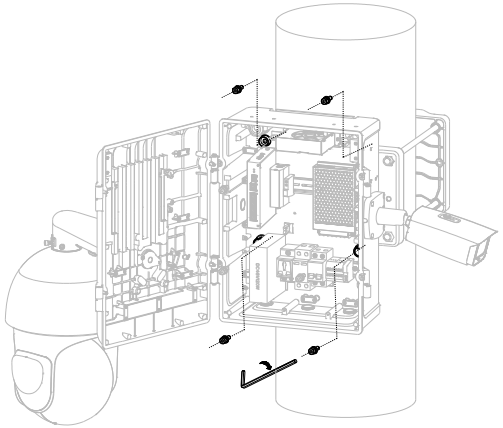
Step 4 Lift the Box to the bracket, and then hang it on the mounting board.

Figure 4-20 Hang the Box



Step 5 Fix the Box on the mounting board with S6.0 Allen wrench.

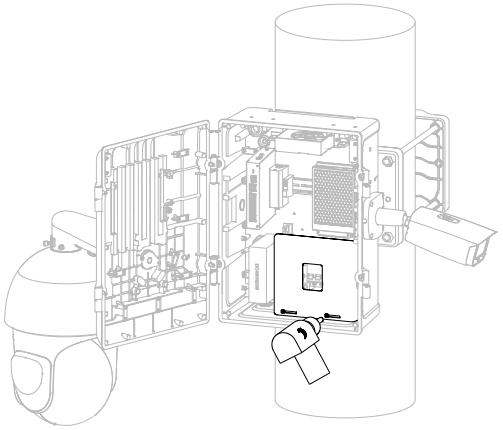
Figure 4-21 Fix the Box on the mounting board



Step 6 Thread the power cable and network cable through the hole at the bottom of the Box. Connect the power cable to the air switch.

Step 7 Fix the cover of heavy current zone to protect installers being damaged.

Figure 4-22 Fix the cover of heavy current zone



Step 8 Tighten the screws that you unscrewed before to lock the Box.

4.3.5 Commissioning

Step 1 Plug the Box in.

Step 2 Play live videos of the cameras to check if all channels working normally.

An integrated mount tester is recommended to adjust videos and debug devices that are at a high place.

Step 3 Adjust the angle of the cameras, illuminators, and wireless devices. Make sure that the cameras can capture videos normally.

When adjusting the angle of bullet cameras, you need to:

- Unscrew the screws for angle adjusting, adjust the angle of the bullet camera, and then tighten the screws.
- Do not rotate the body of the bullet camera more than 360 degrees.

Step 4 Make sure that devices such as wireless devices and illuminators work normally.