Boom Barrier

User's Manual

ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD. V1.0.0

Foreword

General

This manual introduces the structure, installation, and maintenance of the boom barrier (hereinafter referred to as the "Barrier"). Read carefully before using the Barrier, and keep the manual safe for future reference.

Models

Model	Description
DHI-IPMECD-2031-RM1515-T20	Right folding arm barrier 1.5 m–1.5 m (2 s)
DHI-IPMECD-2031-LM1515-T20	Left folding arm barrier 1.5 m–1.5 m (2 s)
DHI-IPMECD-2031-RM2020-T20	Right folding arm barrier 2 m–2 m (2 s)
DHI-IPMECD-2031-LM2020-T20	Left folding arm barrier 2 m–2 m (2 s)
DHI-IPMECD-2031-RM2525-T30	Right folding arm barrier 2.5 m–2.5 m (3 s)
DHI-IPMECD-2031-LM2525-T30	Left folding arm barrier 2.5 m–2.5 m (3 s)
DHI-IPMECD-2032-RM30-T10	Right straight arm barrier 3 m (1 s)
DHI-IPMECD-2032-LM30-T10	Left straight arm barrier 3 m (1 s)
DHI-IPMECD-2032-RM35-T15	Right straight arm barrier 3.5 m (1.5 s)
DHI-IPMECD-2032-LM35-T15	Left straight arm barrier 3.5 m (1.5 s)
DHI-IPMECD-2032-RM40-T20	Right straight arm barrier 4 m (2 s)
DHI-IPMECD-2032-LM40-T20	Left straight arm barrier 4 m (2 s)
DHI-IPMECD-2032-RM45-T25	Right straight arm barrier 4.5 m (2.5 s)
DHI-IPMECD-2032-LM45-T25	Left straight arm barrier 4.5 m (2.5 s)
DHI-IPMECD-2032-RM50-T30	Right straight arm barrier 5 m (3 s)
DHI-IPMECD-2032-LM50-T30	Left straight arm barrier 5 m (3 s)
DHI-IPMECD-2032-RM55-T35	Right straight arm barrier 5.5 m (3.5 s)
DHI-IPMECD-2032-LM55-T35	Left straight arm barrier 5.5 m (3.5 s)
DHI-IPMECD-2032-RM60-T40	Right straight arm barrier 6 m (4 s)
DHI-IPMECD-2032-LM60-T40	Left straight arm barrier 6 m (4 s)

Safety Instructions

The following signal words 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.

Signal Words	Meaning
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.
TIPS	Provides methods to help you solve a problem or save time.
NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Date
V1.0.0	First release.	January 2024

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, audio, fingerprints, and license plate number. You need to be in compliance with your local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures which include but are not limited: Providing clear and visible identification to inform people of the existence of the surveillance area and provide required contact information.

About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. 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 company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Important Safeguards and Warnings

This section introduces content covering the proper handling of the Barrier, hazard prevention, and prevention of property damage. Read carefully before using the Barrier, comply with the guidelines when using it, and keep the manual safe for future reference.

Transportation Requirements

- Pack the Barrier with packaging provided by its manufacturer or packaging of the same quality before transporting it.
- Transport the Barrier under allowed humidity and temperature conditions.

Storage Requirements

Store the Barrier under allowed humidity and temperature conditions.

Installation Requirements

- Do not connect the power adapter to the Barrier while the adapter is powered on.
- Strictly comply with the local electric safety code and standards. Make sure that the ambient voltage is stable and meets the power supply requirements of the Barrier.
- Do not connect the Barrier to 2 or more kinds of power supplies, to avoid damage to the Barrier.

- Personnel working at heights must take all necessary measures to ensure personal safety including wearing a helmet and safety belts.
- Do not place the Barrier in a place exposed to sunlight or near heat sources.
- Keep the Barrier away from dampness, dust, and soot.
- Put the device in a well-ventilated place, and do not block its ventilation.
- Please follow the electrical requirements to power the device.
  - Following are the requirements for selecting a power adapter.
    - The power supply must conform to the requirements of IEC 60950-1 and IEC 62368-1 standards.
    - The voltage must meet the SELV (Safety Extra Low Voltage) requirements and not exceed ES-1 standards.
    - When the power of the device does not exceed 100 W, the power supply must meet LPS requirements and be no higher than PS2.
  - We recommend using the power adapter provided with the device.
  - When selecting the power adapter, the power supply requirements (such as rated voltage) are subject to the device label.

- The Barrier is a class I electrical appliance. Make sure that the power supply of the device is connected to a power socket with protective earthing.

Operation Requirements

- Check whether the power supply is correct before use.
- Do not unplug the power cord on the side of the Barrier while the adapter is powered on.
- Operate the Barrier within the rated range of power input and output.
- Use the Barrier under allowed humidity and temperature conditions.
- Do not drop or splash liquid onto the Barrier, and make sure that there is no object filled with liquid on the Barrier to prevent liquid from flowing into it.
- Do not disassemble the Barrier without professional instruction.

Table of Contents

1 Introduction

1.1 Overview

The Barrier uses digital variable frequency servo controller, allowing speed control of the drive motor without loss of output torque. The opening and closing time of the Barrier can be set from 1 s to 4 s and from 2 s to 6 s respectively.

The Barrier can be controlled remotely from a maximum distance of 50 m provided that the surrounding area is free from any obstacles or interference.

The Barrier is applicable to entrances and exits of supermarkets, hotels, governments, schools, airports, factories and more.

1.2 Features

Servo Self-optimization of Barrier Arm Stability

The rising and falling stability of the barrier arm can be set up respectively. Once set, the variable frequency servo controller can automatically detect and optimize the arm's stability, eliminating any shaking. This not only enhances the user experience but also extends the overall lifespan of the Barrier system.

Free of Sensor and Electrical Maintenance

The Barrier utilizes a brushless motor with an integrated angle encoder. The all-digital servo controller makes in-place detection free of sensor, eliminating the need for electrical maintenance. This prevents device wear and hidden issues.

Anti-condensation in Cold Weather

When the Barrier stops working, its motor is still powered on with low consumption. This ensures normal motor temperature and keeps the lubricating oil from freezing even in cold environment, enabling seamless operation of the Barrier.

Auto Opening in Case of Power Failure

In the event of a power failure, if the angle between the barrier arm and the horizontal plane is less than 45°, it will automatically fall to the closing state by default. However, with the proper rubber gaskets and springs for power-off opening, when the Barrier is suddenly powered off, the barrier arm will automatically and slowly rise to the opening state.

Manual Opening, Closing and Locking of Barrier Arm during Power Failure

During power failure, you can manually rotate the manual handle or locking handle to operate the barrier arm.

The barrier arm can be locked at any position between horizontal and vertical positions. When the barrier motor stops, swipe down the locking button on the manual handle or locking handle to lock

the Barrier. Once locked, the Barrier will remain in place even when power is restored. To unlock the Barrier, swipe up the locking button on the manual handle or locking handle.

WARNING

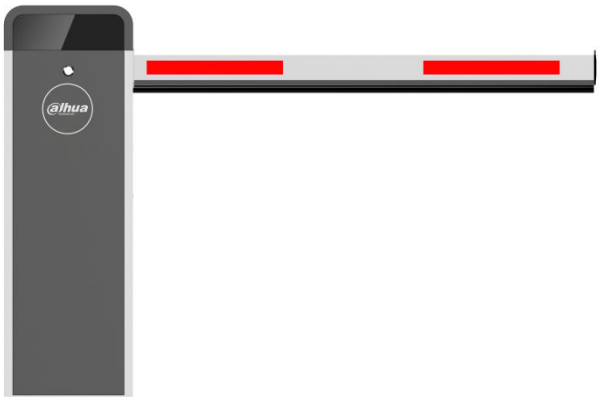
Do not use this function when the power is on. Otherwise, it might cause hand injury or serious damage to the motor.

2 Structure

2.1 Appearance

Straight Arm Barrier

Figure 2-1 Straight arm barrier

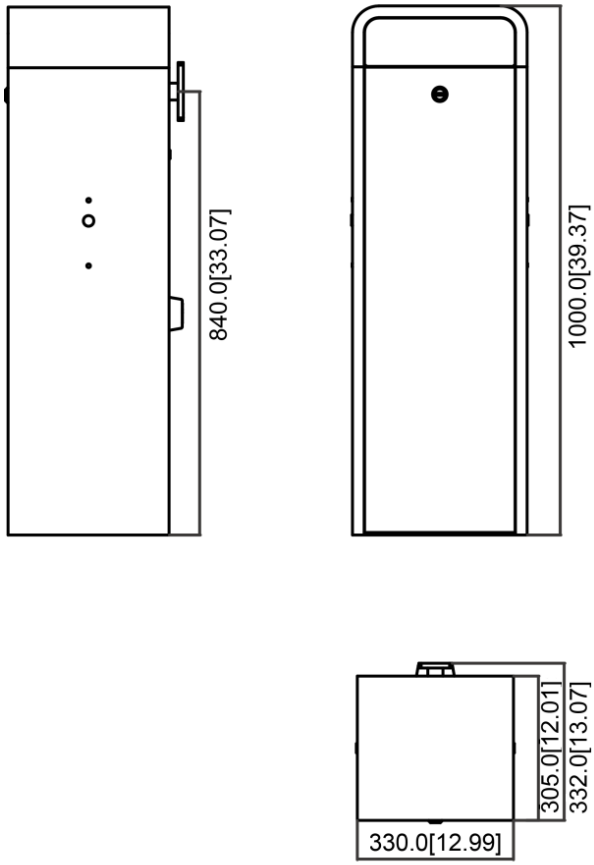


Folding Arm Barrier

Figure 2-2 Folding arm barrier

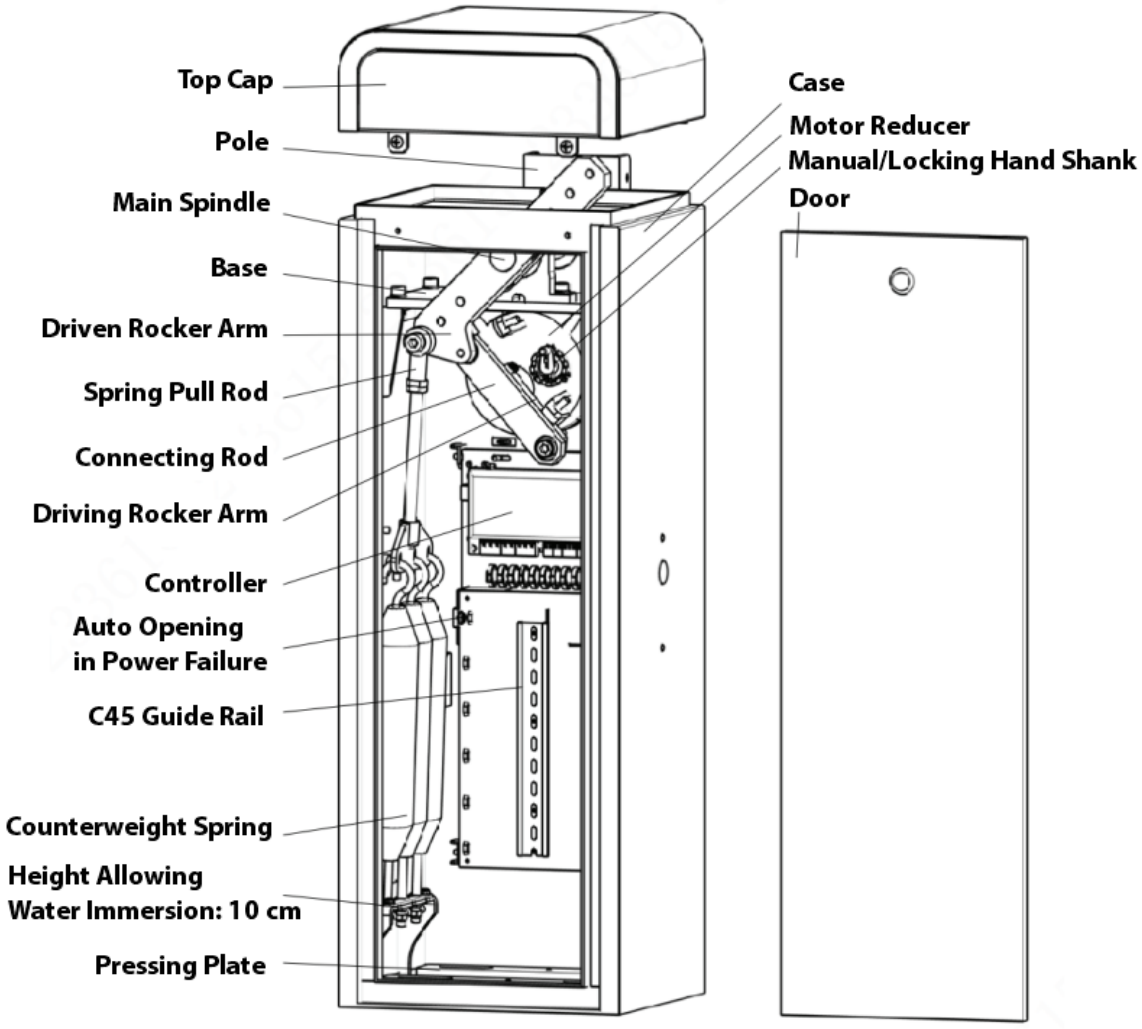
2.2 Dimensions

Figure 2-3 Dimensions (mm [inch])



2.3 Components

Figure 2-4 Components



3 Installation

3.1 Installation Environment

- Place the Barrier in a visible location.
- Make sure the Barrier arm faces outward towards the intersection.
- Install the Barrier on horizontal ground.
- Ensure that the installation site has a level and solid ground.
  - For non-concrete surfaces, such as soil, a cast-in-place base is required.
  - On concrete ground, you can directly fix the casing using the provided expansion bolts.

3.2 Installing the Case

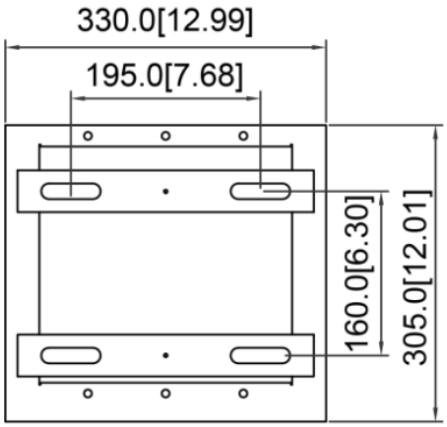
Procedure

Step 1 Open the casing door, and then take out the accessory package.

Step 2 Place the casing at the desired position.

Step 3 Mark out the boreholes for 4 expansion bolts, and then move away the casing.

Figure 3-1 Dimensions of casing base (mm [inch])



Step 4 Drill the holes with a depth of 110 mm–120 mm, and then drive 4 expansion bolts into the holes.

Adjust the horizontal and vertical angle of the casing, then tighten the nuts.

Figure 3-2 Install the case

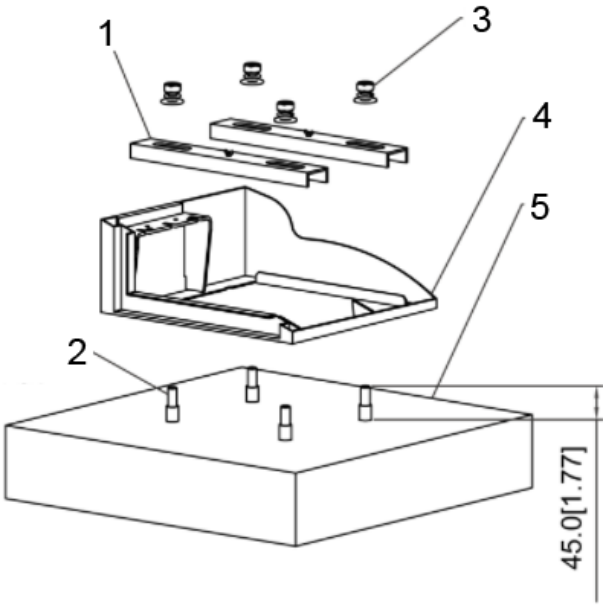


Table 3-1 Description of installation components

No.	Description	No.	Description
1	2 metal plates	4	Casing of the Barrier
2	Four M12 × 120 anchor bolts	5	Concrete base or pavement
3	Four M12 nuts + spring gaskets + flat gaskets	—	

3.3 Installing the Barrier Arm

The installation steps vary with the types of the barrier arm. Install the barrier arm based on its type.

3.3.1 Installing the Straight Arm without the Anticollision Feature

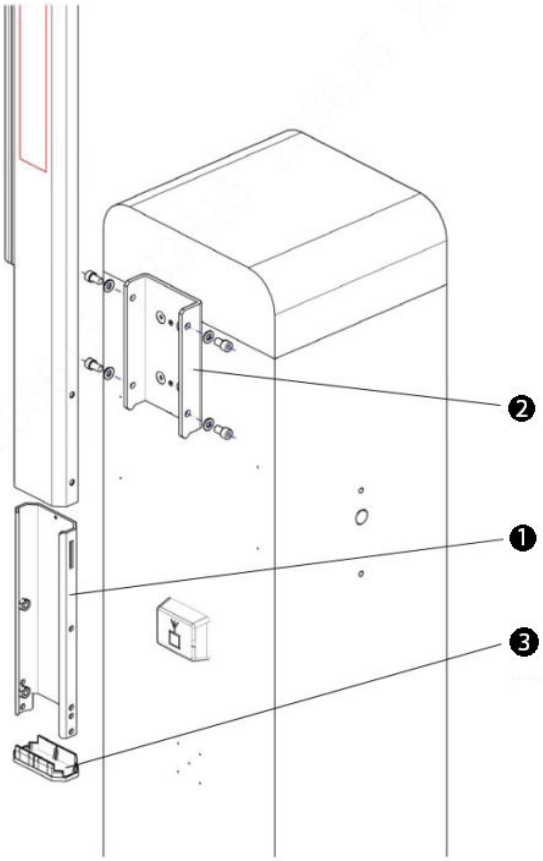
Procedure

Step 1 Insert the straight arm into the octagonal accessory, and then align holes.

Step 2 Push the octagonal accessory into the U-shaped bracket, align holes, and then turn the screws on both sides.

Step 3 Knock the lid to the bottom of the octagonal accessory.

Figure 3-3 Installation diagram



3.3.2 Installing the Straight Arm with the Anticollision Feature

Take out the accessories, and then install the straight arm based on the following figures.

Figure 3-4 Installation diagram (1)

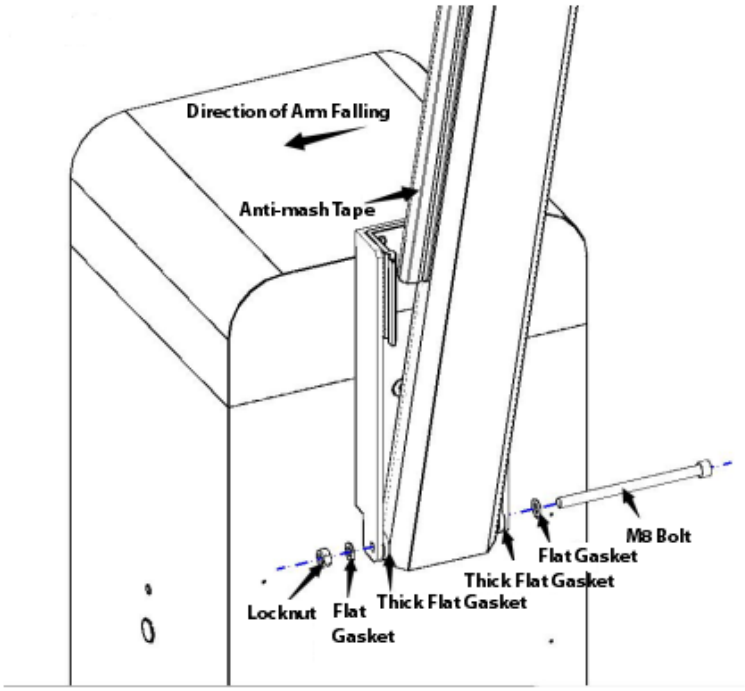
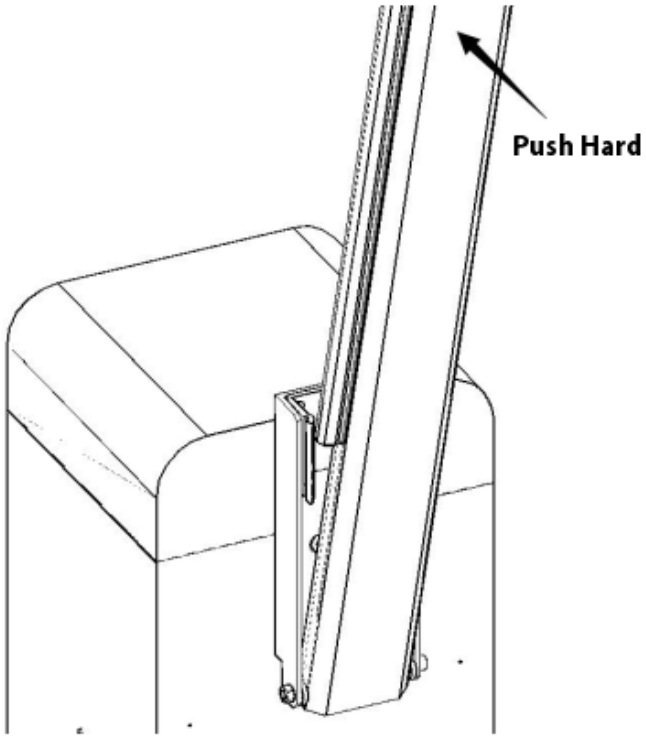


Figure 3-5 Installation diagram (2)



3.3.3 Installing the Folding Arm

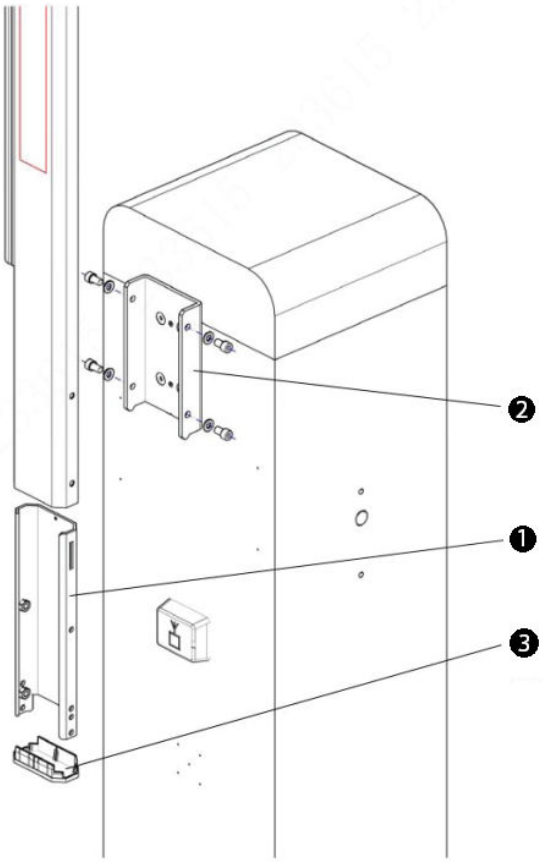
Procedure

Step 1 Insert the straight arm into the octagonal accessory, and then align holes.

Step 2 Push the octagonal accessory into the U-shaped bracket, align holes, and then turn the screws on both sides.

Step 3 Knock the lid to the bottom of the octagonal accessory.

Figure 3-6 Installation diagram



3.4 Adjusting Barrier Arm Length

The operating parameters are adjusted before delivery according to the required barrier arm length. When the Barrier is delivered on site, you need to adjust the balance of the Barrier again to keep the barrier arm in horizontal state.

Procedure

Step 1 Adjust the barrier arm length.

Determine whether to shorten the barrier arm as required on site, and then install the barrier arm on the Barrier.

Step 2 Set the spring balance with the arm weight. For details, see "3.6 Setting Spring Balance".

Step 3 Set the control board parameters.

When powered on, set the value of F1 and F2, and then raise and lower the arm to test its stability. If the arm moves smoothly without any shaking, it is properly balanced. For details, see "4.1 Configuring Control Board Parameters".

3.5 Electrical Wiring

Figure 3-7 Control board ports

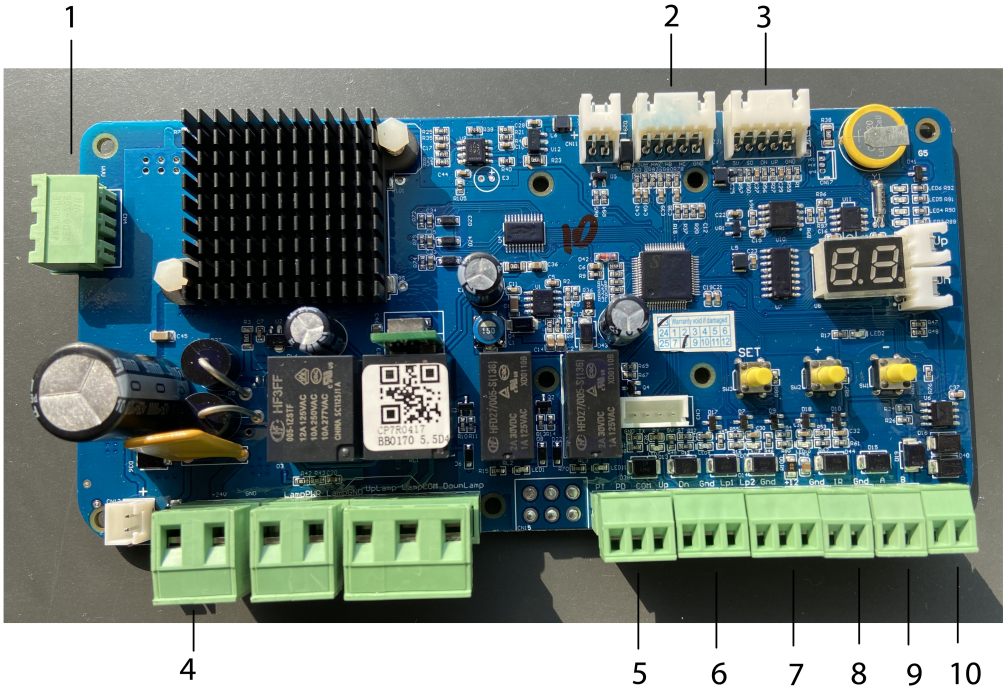


Table 3-2 Description of control board ports

No.	Description	No.	Description
1	Motor power input	6	Open/close input
2	Angle gauge	7	Vehicle detector input
3	Remote control	8	12 VDC output
4	24 VDC power input	9	Vehicle detector input
5	Opened/closed status output	10	RS-485 communication

Figure 3-8 Control board wiring

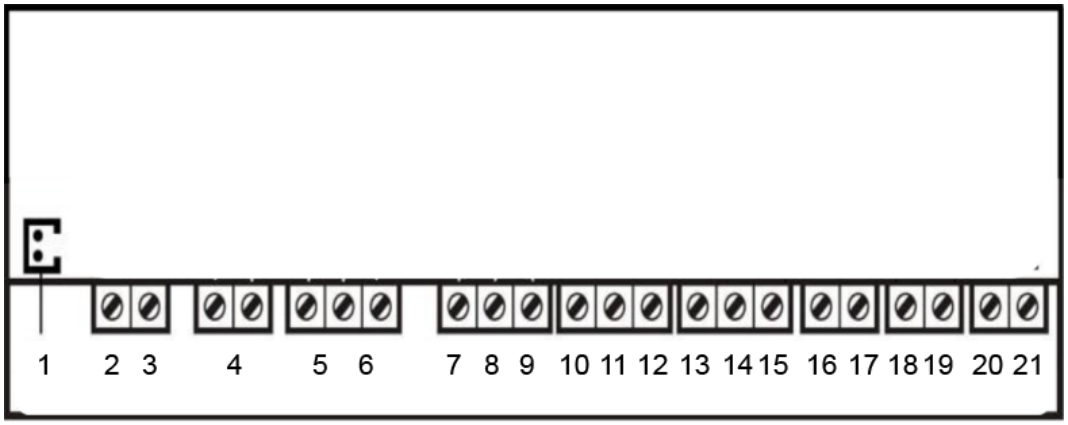


Table 3-3 Description of control board

No.	Description	No.	Description
1	Power off when arm rises	12	GND
2	24 VDC power input	13	Radar/Loop
3	IN power output	14	
4	Reserved	15	GND
5		16	12 VDC power input
6		17	OUT output
7	Opened	18	Radar/Loop
8	Closed	19	GND
9	COM	20	RS485-A
10	Open the Barrier	21	RS485-B
11	Close the Barrier	—	

Opening and Closing Control

Opening priority (falling barrier arm will rise if there is a rise signal) and closing priority (rising barrier arm will fall if there is a fall signal) functions are available. It can be controlled by digital on-off input, remote control, and RS-485 serial commands.

Automatic Rise when the Barrier Arm Meets Obstacle (Pressure Wave Anti-smashing)

To protect vehicles and pedestrians, the falling barrier arm will automatically rise to a vertical position when it encounters an obstacle. You can adjust the sensitivity according to your needs.

Radar/Loop Anti-smashing

The falling barrier arm will immediately rise to vertical position if the radar/loop signal is triggered, during which the arm will not fall down until the input returns to normal.

This feature is unavailable when the angle between the arm and ground is smaller than 9°.

Rising Priority

In the event of a vehicle approaching while the barrier arm is falling, the security guard can press the rising button on the remote control to raise the barrier arm, preventing the vehicle from being smashed.

Auto Delay Closing (F5)

Once the barrier arm has risen to the vertical position, it will automatically lower itself to the closed status after a certain delay if neither rising nor falling inputs are triggered. You can customize the delay time (1 s–90 s) and enable or disable the switch through programming. It is disabled by default.

Opening Mode (C2)

After you press and hold the stop key on the remote control for 3 seconds, the Barrier enters the opening mode. In this case, the barrier arm automatically rises and keeps vertical, and the nixie tube on the mainboard displays EF.

During this mode, any attempts to lower the barrier arm will be ignored until you press and hold the close key for 3 seconds to disable it. It is disabled by default.

Auto Opening in Power Failure

When the Barrier is powered off, the barrier arm automatically rises to allow all vehicles to pass.

If you want to disable auto opening in power failure, disconnect the capacitor module on the left corner of the mainboard.

3.6 Setting Spring Balance

The springs are set to be balanced in factory. Do not change the arm length or weight if it is not necessary.

Table 3-4 Spring quantity and size with arm length

Arm	Arm Length (m)	Spring Quantity	Spring Size
Straight arm with the rubber strip	3	2	φ3.5
	3.5	3	φ3.5
	4	2	φ5.0
	4.5	2	φ5.0
	5	2	φ5.0
	5.5	3	φ5.0
	6	3	φ5.0
Folding arm	3	1	φ5.0
	4	1	φ5.0
	5	3	φ5.0
The spring color is black.			

Procedure

Step 1 Open the casing.

Step 2 Adjust the spring nuts based on the weight added or decreased on the arm.

- For weight increased, tighten the nuts clockwise to increase the spring force.
- For weight decreased, loosen the nuts counter-clockwise to decrease the spring force.

When adjusting, all nuts should be turned at the same cycles. This will help distribute the load evenly and prevent any imbalance.

Step 3 Use the manual handle to rotate the arm into the closed position, and then stop rotating when the arm is at an angle between 40° to 45°.

- If the arm moves towards open status, loosen the spring nuts.
- If the arm moves towards close status, tighten the spring nuts.

Step 4 Tighten the nuts after the adjustment.

4 Control Board Settings

4.1 Configuring Control Board Parameters

There are 3 buttons (**SET**, **+**, **-**) on the control board. During normal operation, **+** is manual rising button; **-** is manual falling button; the LED nixie tube displays the position state value of the barrier arm (vertical 0 and horizontal 90) or error code in real time.

To make the configured parameters take effect, exit the setting mode and power off the Barrier after you configure the parameters. Then, power the Barrier after the nixie tube is off.

Procedure

Step 1 Press **SET** (first) and **+** at the same time to enter the programming mode. At the beginning, the nixie tube displays **F1** by default.

Step 2 Press **SET** to select a function. Every time you press **SET**, the sequence number of function increases by 1 until 9 and then returns to 1 and repeat.

Table 4-1 Function description

SN	Description
F1	• Rising deceleration point. • Incorrect value might cause the barrier arm to rise too slowly or violently shake. Factory default: 35.
F2	• Falling deceleration point. • Incorrect value might cause the barrier arm to fall too slowly or violently shake. Factory default: 60.
F3	• Rebound threshold: 12–99. The larger the value, the slower the speed. Set it to 99 to disable this function. • Factory default: 50.
F4	• Address: 1–99. • Factory default: 1.
F5	• Auto closing delay: 1–99 seconds. Set it to 00 to disable this function. • Factory default: 00.
F6	• Rising speed: 0–80. The smaller the value, the faster the speed. • Factory default: 10 for a reduction ratio of 50, 20 for a reduction ratio of 100.
F7	• Falling speed: 0–80. The smaller the value, the faster the speed. • Factory default: 10 for a reduction ratio of 50, 20 for a reduction ratio of 100.
F8	Specifies whether to enable the terminal of loop or radar. • 00: Enable the terminal. • 01: Disable the terminal.

SN	Description
F9	• Loop filtering time (the duration between a vehicle passing through the Barrier and the arm falling down): 0–6 seconds. The larger the value, the longer the filtering time. Set it to 0 to disable this function. • Factory default: 0.
C0	• Left and right settings: 0 indicates right and 1 indicates left. • Factory default: As required by the user.
C1	• Relay settings: 0/10-RL1: Output red and green light signals; 1/11-RL1: Output when the barrier arm is operated; 0/1-RL2: Loop output; 10/11-RL2: Rising to position output; RL3: Falling to position output. • Factory default: 10.
C2	• Opening mode settings: 0: Disable; 1: Enable. • Factory default: 0.
C3	Repeat opening memory settings: 0: Disable; 1: Enable. Factory default: 0.
C4	• Reduction ratio settings: 0 indicates reduction ratio is 50,1 indicates 100. • Factory default: As required by the user.
C5	Reserved. The settings cannot be modified.
C6	
C7	Remote learning. For details, see "4.2 Remote Control Learning".

The C function menu is hidden by default. You need to press and hold **SET** for 6 seconds in programming state to display the settings.

Step 3 Configure the parameters.

Under the required function number, press **+** or **-** to display parameters of the function, and then press **+** or **-** within 10 seconds to increase or decrease the parameter value. After modifying the parameters, press **SET** to display the function number again and save the parameters.

Step 4 Press **SET** (first) and **-** at the same time to exit the programming mode. The system will automatically exit the programming mode if there is no input for 30 seconds.

4.2 Remote Control Learning

To match the remote control with the Barrier, you need to make the remote control learn the functions of the Barrier. There are 2 versions of remote controls on the market:

- Version 1: The button in the right corner of the remote control is  .
- Version 2: The button in the right corner of the remote control is  .

4.2.1 Remote Control of Version 1

Matching the Remote Control with the Barrier

1. Power off the Barrier, and wait for the nixie tube to go off.
2. Press and hold the button () on the remote control.
3. Power on the Barrier, and wait for 3 seconds.
4. Release the button ().

Mismatching the Remote Control with the Barrier

For the remote control of version 1, the Barrier can only be matched with one remote control. Therefore, when you match a new remote control with the Barrier, the previously matched remote control is cleared.

4.2.2 Remote Control of Version 2

- The match and mismatch of remote controls are supported by the receiver and control board of the Barrier. If you change the control board of the Barrier, remote controls need to learn the functions of the Barrier again.
- You can match up to 5 remote controls with the Barrier.

Matching the Remote Control with the Barrier

1. Press and hold **SET** , and then press **+** to enter the programming mode.
2. Press and hold **SET** for 6 seconds after the nixie tube displays **F1**.

   In the case, the nixie tube displays **C0**.
3. Press **SET** multiple times until the nixie tube displays **C7**.
4. Press **+** to enter C7 setting.

   In this case, the nixie tube displays the number of stored remote control codes.
5. Press **+** to start learning, and then press and hold the button () on the remote control until the indicator light flashes and the number increases by 1.
6. (Optional) Repeat step 5 to match other remote controls.
7. Exit the learning mode.

   a. Press **SET**.
   b. Press and hold **SET** , and then press **-**.

Mismatching the Remote Control with the Barrier

1. Press and hold **SET** , and then press **+** to enter the programming mode.
2. Press and hold **SET** for 6 seconds after the nixie tube displays **F1**.

   In the case, the nixie tube displays **C0**.
3. Press **SET** multiple times until the nixie tube displays **C7**.
4. Press **+** to enter C7 setting.

In this case, the nixie tube displays the number of stored remote control codes.

5. Press - 3 times in a row to mismatch all remote controls.

Figure 4-1 Remote control of version 2

5 Maintenance and Operation

It is recommended to inspect the following items every 3 months:

- Screw looseness

  Open the upper cover of the Barrier, and control the barrier arm to check whether the screws of the spring rod are loose and whether the retainer rings of the connecting rod are properly secured.

  If any of these components are not in place, the Barrier arm might fall off and potentially cause vehicle damage.

  If the screws are loose, first turn off the power, manually tighten the screws, and then restore power to the Barrier and verify that it is functioning correctly.

Figure 5-1 Screw looseness

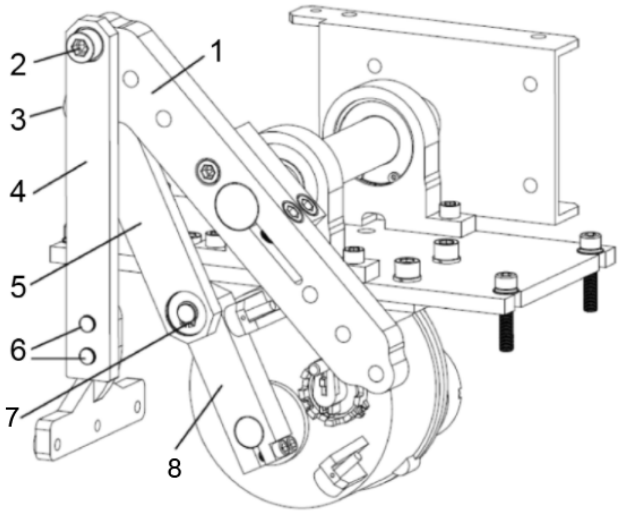


Table 5-1 Description of screw looseness

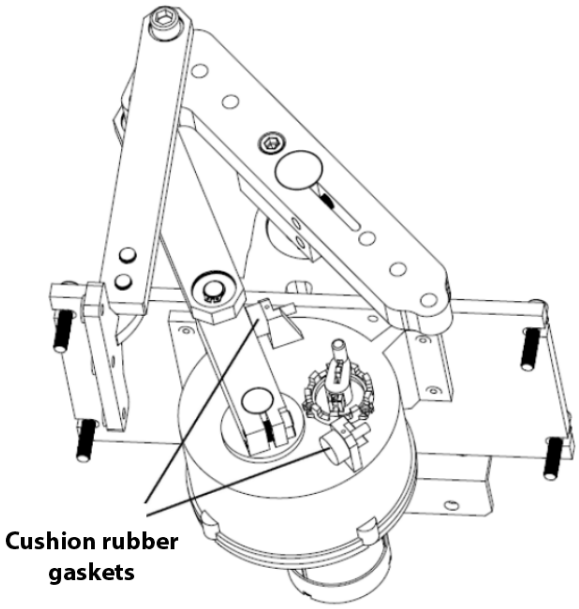
No.	Description	No.	Description
1	Driven rocker arm	5	Connecting rod
2	M12 screw	6	M10 screw
3, 7	Retainer ring	8	Driving rocker arm
4	Spring rod	—	

- Damage of cushion rubber gasket

  Open the upper cover of the Barrier, and control the barrier arm up and down to check whether the cushion rubber gaskets are damaged when they are being impacted.

  Remove damaged cushion rubber gaskets and replace them with new ones.

Figure 5-2 Cushion rubber gaskets



- Spring balance

  Temporarily turn off the power, and keep the barrier arm at 40°–45° from the horizontal plane to check whether the barrier arm can be still and balanced. If not, adjust the spring tightness. For details, see "3.6 Setting Spring Balance".
- Display of control board

  When the Barrier works, check whether the control board LED displays the normal angle value. If an error code is displayed, find the cause and solve the problem. For details, see "6.1 Error Codes".

6 Common Faults and Troubleshooting

6.1 Error Codes

Table 6-1 Error code description

Error Code	Description
E1	Pulse angle gauge or motor error code. Possible causes: ● The angle gauge plug of the motor is loosened. ● The strength of the spring is mismatched with that of the rod.
E3	Rising input error code: For barrier opening and GND, if there is continuous input short circuit of more than 10 seconds, E3 is reported. The error disappears after power off.
E4	Falling input error code: For barrier closing and GND, if there is continuous input short circuit of more than 10 seconds, E5 is reported. The error disappears after power off.
E5	Loop/radar input error code: For loop/radar and GND, if there is continuous input short circuit of more than 10 seconds, E5 is reported. The error disappears after power off.
E6	IR input error code: For the IR terminal, if there is continuous input short circuit of more than 10 seconds, E6 is reported. The error disappears after power off.
E7	Software smooth mode code.
E8	Power failure opening code. After the Barrier is powered off, the nixie tube displays E8.
EE	Memory opening code (counting mode).
EF	The Barrier enters the opening mode.

6.2 Analysis of Common Faults

Table 6-2 Analysis of common faults

FAQ	Possible Causes	Solutions
Falling barrier arm suddenly rises in the midway.	If the F3 value is smaller than 25, the high rebound sensitivity, barrier arm inertia or wind might cause this problem.	Adjust the rebound value F3 to 50.
	Spring is too tight.	Loosen the spring.
The barrier arm cannot be controlled up and down, while the control board LED displays error code E1.	If the barrier arm cannot rise during power-on, but the control board LED displays the movement angle value when you manually rise the barrier arm, it means that the motor is damaged.	Replace the motor.

FAQ	Possible Causes	Solutions
	If the barrier arm moves slowly, but the control board LED does not display the movement angle value, it means that the angle encoder of the motor is damaged.	Replace the angle encoder of the motor.
The barrier arm violently shakes when it rises or falls.	The barrier arm is not tightly fixed.	Inspect and fix the barrier arm again.
	The transmission mechanism in the Barrier is loose.	Readjust the limit screws and cushion rubber gaskets of the transmission mechanism.
	The balance spring in the Barrier is broken.	Replace it with a new one of the same specifications.
The remote control cannot control the barrier arm to rise or fall, but the controller can.	The battery of remote control has run out of power.	Inspect whether the indicator light is on when pressing the remote control. If not, disassemble the remote control to inspect whether the battery has run out of power, whether the battery is out of alignment, or whether the antenna is intact.
	The remote control is damaged.	Each Barrier is equipped with 2 wireless remote controls. If only one of them does not work, it means that the remote control is damaged. If both of them do not work, the receiver might be damaged.
	The receiver is damaged.	
	The control board is damaged.	Inspect whether the receiver makes a beep when pressing the remote control. If yes, it means that the control board is damaged.

FAQ	Possible Causes	Solutions
The Barrier can be controlled by both remote control and software, but the barrier arm does not rise when swiping the card.	The vehicle detector or loop of controller is damaged.	Inspect whether the loop is triggered when swiping the card, then observe whether the indicator on the vehicle detector remains on. If not, it means that the vehicle detector or loop is damaged. Turn off the power, and switch the vehicle detector on the Barrier with the one on the controller. If it functions properly, it means that the vehicle detector is faulty. If the indicator light is not on, it means that the loop line might have an open circuit or a short circuit.
	The loop under the controller has an open circuit or a short circuit.	If the vehicle detector works normally when the loop is triggered, inspect whether the LED on the control board of controller lights up. If yes, check whether an event is uploaded to the computer, and whether a valid card is read. If no event is uploaded, the reader might be damaged. If an event is uploaded, check the specific event, and inspect whether an expired card, entered card, or invalid card is read.

6.3 Notes

- Before powering on the Barrier, ensure that all parts are securely tightened and that the wiring is correct.
- Make sure that nobody is under the barrier arm when you debug the control board.
- Nobody is allowed to pass through under the barrier arm.
- If the remote control distance is shorted than expected, check whether the receiver is blocked by metals or the remote control is out of power. During severe weather such as rain, fog, strong winds, and snow, or when there are too many remote controls, the remote control distance will be shortened.
- You must use the barrier arm provided the manufacturer. Otherwise, you cannot use the quality assurance service.
- We recommend you do not lengthen or shorten the barrier arm. If you do so, you must adjust the parameters of the spring and control board as required. Any faults caused by the lengthening or shortening without parameter adjustment are not covered under the warranty.
- Any faults caused by abnormal operations or non-quality issues (such as natural disasters) are not within the scope of warranty.

- Check whether the blade of the Barrier is frozen before you power on the Barrier. Deice the blade before use. Any faults caused by the frozen blade is not within the scope of warranty.

Appendix 1 Security Commitment and Recommendation

Dahua Vision Technology Co., Ltd. (hereinafter referred to as "Dahua") attaches great importance to cybersecurity and privacy protection, and continues to invest special funds to comprehensively improve the security awareness and capabilities of Dahua employees and provide adequate security for products. Dahua has established a professional security team to provide full life cycle security empowerment and control for product design, development, testing, production, delivery and maintenance. While adhering to the principle of minimizing data collection, minimizing services, prohibiting backdoor implantation, and removing unnecessary and insecure services (such as Telnet), Dahua products continue to introduce innovative security technologies, and strive to improve the product security assurance capabilities, providing global users with security alarm and 24/7 security incident response services to better protect users' security rights and interests. At the same time, Dahua encourages users, partners, suppliers, government agencies, industry organizations and independent researchers to report any potential risks or vulnerabilities discovered on Dahua devices to Dahua PSIRT, for specific reporting methods, please refer to the cyber security section of Dahua official website.

Product security requires not only the continuous attention and efforts of manufacturers in R&D, production, and delivery, but also the active participation of users that can help improve the environment and methods of product usage, so as to better ensure the security of products after they are put into use. For this reason, we recommend that users safely use the device, including but not limited to:

Account Management

1. **Use complex passwords**

   Please refer to the following suggestions to set passwords:

   - The length should not be less than 8 characters;
   - Include at least two types of characters: upper and lower case letters, numbers and symbols;
   - Do not contain the account name or the account name in reverse order;
   - Do not use continuous characters, such as 123, abc, etc.;
   - Do not use repeating characters, such as 111, aaa, etc.

2. **Change passwords periodically**

   It is recommended to periodically change the device password to reduce the risk of being guessed or cracked.

3. **Allocate accounts and permissions appropriately**

   Appropriately add users based on service and management requirements and assign minimum permission sets to users.

4. **Enable account lockout function**

   The account lockout function is enabled by default. You are advised to keep it enabled to protect account security. After multiple failed password attempts, the corresponding account and source IP address will be locked.

5. **Set and update password reset information in a timely manner**

   Dahua device supports password reset function. To reduce the risk of this function being used by threat actors, if there is any change in the information, please modify it in time. When setting security questions, it is recommended not to use easily guessed answers.

Service Configuration

1. **Enable HTTPS**

   It is recommended that you enable HTTPS to access Web services through secure channels.
2. **Encrypted transmission of audio and video**

   If your audio and video data contents are very important or sensitive, we recommend you to use encrypted transmission function in order to reduce the risk of your audio and video data being eavesdropped during transmission.
3. **Turn off non-essential services and use safe mode**

   If not needed, it is recommended to turn off some services such as SSH, SNMP, SMTP, UPnP, AP hotspot etc., to reduce the attack surfaces.

   If necessary, it is highly recommended to choose safe modes, including but not limited to the following services:

   - SNMP: Choose SNMP v3, and set up strong encryption and authentication passwords.
   - SMTP: Choose TLS to access mailbox server.
   - FTP: Choose SFTP, and set up complex passwords.
   - AP hotspot: Choose WPA2-PSK encryption mode, and set up complex passwords.
4. **Change HTTP and other default service ports**

   It is recommended that you change the default port of HTTP and other services to any port between 1024 and 65535 to reduce the risk of being guessed by threat actors.

Network Configuration

1. **Enable Allow list**

   It is recommended that you turn on the allow list function, and only allow IP in the allow list to access the device. Therefore, please be sure to add your computer IP address and supporting device IP address to the allow list.
2. **MAC address binding**

   It is recommended that you bind the IP address of the gateway to the MAC address on the device to reduce the risk of ARP spoofing.
3. **Build a secure network environment**

   In order to better ensure the security of devices and reduce potential cyber risks, the following are recommended:

   - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network;
   - According to the actual network needs, partition the network: if there is no communication demand between the two subnets, it is recommended to use VLAN, gateway and other methods to partition the network to achieve network isolation;
   - Stablish 802.1x access authentication system to reduce the risk of illegal terminal access to the private network.

Security Auditing

1. **Check online users**

   It is recommended to check online users regularly to identify illegal users.
2. **Check device log**

By viewing logs, you can learn about the IP addresses that attempt to log in to the device and key operations of the logged users.

3. **Configure network log**

   Due to the limited storage capacity of devices, the stored log is limited. If you need to save the log for a long time, it is recommended to enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

Software Security

1. **Update firmware in time**

   According to the industry standard operating specifications, the firmware of devices needs to be updated to the latest version in time in order to ensure that the device has the latest functions and security. If the device is connected to the public network, it is recommended to enable the online upgrade automatic detection function, so as to obtain the firmware update information released by the manufacturer in a timely manner.

2. **5.2 Update client software in time**

   We recommend you to download and use the latest client software.

Physical Protection

It is recommended that you carry out physical protection for devices (especially storage devices), such as placing the device in a dedicated machine room and cabinet, and having access control and key management in place to prevent unauthorized personnel from damaging hardware and other peripheral equipment (e.g. USB flash disk, serial port).

ENABLING A SMARTER SOCIETY AND BETTER LIVING

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