



# Network Box Camera Installation Manual

V3.0.0



Hangzhou Hikvision Digital Technology Co., Ltd.

<http://www.hikvision.com>

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Thank you for purchasing our product. If there are any questions, or requests, please do not hesitate to contact the dealer.

This manual applies to **DS-2CD886BF-E**, **DS-2CD886MF-E**, **DS-2CD876BF** and **DS-2CD876MF** Network Camera.

This manual may contain several technical incorrect places or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

#### DISCLAIMER STATEMENT

“Underwriters Laboratories Inc. (“UL”) has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock or casualty hazards as outlined in UL’s Standard(s) for Safety, UL60950-1. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product. UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT.”



## Safety Instruction

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into 'Warnings' and 'Cautions':

**Warnings:** Serious injury or death may be caused if any of these warnings are neglected.

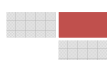
**Cautions:** Injury or equipment damage may be caused if any of these cautions are neglected.

	
<b>Warnings</b> Follow these safeguards to prevent serious injury or death.	<b>Cautions</b> Follow these precautions to prevent potential injury or material damage.

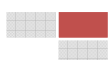


### Warnings:

1. In the use of the product, you must strictly comply with the electrical safety regulations of the nation and region.
2. Source with DC 12V or AC 24V according to the IEC60950-1 standard. Please refer to technical specifications for more details.
3. Do not connect several devices to one power adapter as an adapter overload may cause over-heating and can be a fire hazard.If use the POE as the power supply, please make sure that the POE Switch have the sufficient power.
4. Please make sure that the plug is firmly inserted into the power socket.
5. When the product is installed on a wall or ceiling, the device should be firmly fixed.
6. If smoke, odor, or noise rise from the device, turn off the power at once and unplug the power cable, then contact the service center.
7. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or

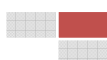


maintenance.)



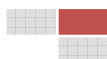
**Notice:**

1. Make sure the power supply voltage is correct before using the camera.
2. Do not drop the camera or subject it to physical shock.
3. Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
4. Do not aim the camera at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.
5. The sensor may be burned out by a laser beam, so when any laser equipment is being used, make sure that the surface of the sensor will not be exposed to the laser beam.
6. Do not place the camera in extremely hot or cold temperatures (the operating temperature should be between  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ , dusty or damp locations, and do not expose it to high electromagnetic radiation.
7. To avoid heat accumulation, good ventilation is required for a proper operating environment.
8. While shipping, the camera should be packed in its original packing, or packing of the same texture.
9. Regular part replacement: a few parts (e.g. electrolytic capacitor) of the equipment should be replaced regularly according to their average life time. The average time varies because of differences between operating environment and usage history, so regular checking is recommended for all users. Please contact with your dealer for more details.

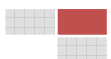


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# Chapter 1 Introduction

Network camera is a kind of embedded digital surveillance product that combines the features of both traditional analog camera and network DVS (Digital Video Server). Due to the embedded Linux operation system and the latest Davinci hardware platform of TI, the system operates with high scheduling efficiency. Furthermore, the firmware is burned in the flash, which makes the product small, reliable and highly stable.

## 1.1 Network camera Functions and Features

Functions:

- ◆ Network Function: Support the TCP/IP protocols and IE browsing.
- ◆ Heartbeat Function: The server can acquire real time operating performance of the network camera through the heartbeat function.
- ◆ Alarm Function: Supports Motion Detection, Video Tampering, Video Loss, Network Broken, IP address conflict, Storage exception.
- ◆ User Management: Support multilevel right management. The administrator can create up to 15 separate users with different right levels, which highly improves the system security.

Compression Functions:

- ◆ Support 1 channel video signal and standard H.264 encoding compression, which supports both variable bit rate and variable frame rate; besides, you can self-define both the video quality and its compressed bit rate.

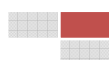
Remote Control:

- ◆ The product offers a 10M/100M self-adaptive Ethernet interface.
- ◆ Support TCP/IP, HTTP, DHCP, DNS, DDNS, RTP/RTSP, PPPoE, SMTP, NTP protocols.
- ◆ Set the parameters, browse real time videos or check the camera performance by software or IE, and store the compressed bit rate through network.
- ◆ Support remote upgrades and maintenance.

## 1.2 Applications

This camera is ideal for remote control network applications. E.g.:

1. Network surveillance for supermarkets and factories.
2. Remote surveillance for homes and offices.
3. Indoor monitoring scenes, such as hotel, corridor, stairway.





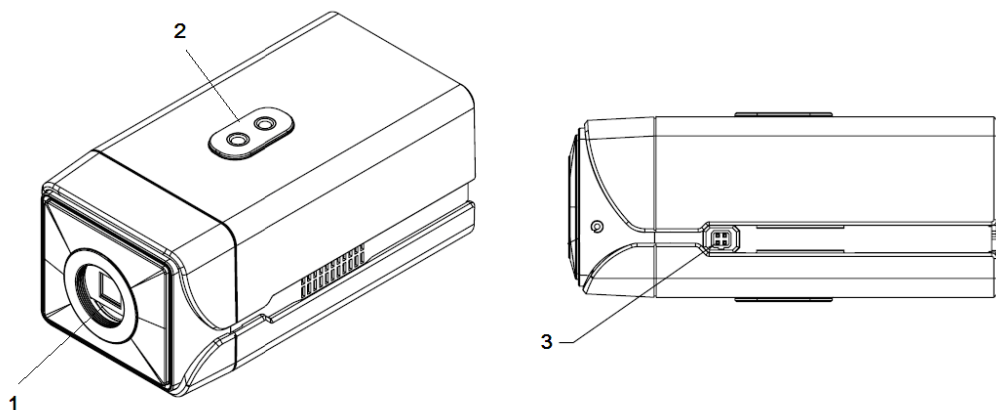
# Chapter 2 Installation

## NOTE:

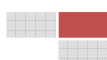
1. Please check if all the items on the package list have been included with your camera.
2. Read the following contents carefully before the installation.
3. Make sure that all the related equipment is power-off during the installation.
4. Check the power supply to prevent any damage caused by mismatching problems.
5. If the product does not operate properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. Users are responsible for any problem caused by modification or repairing without authorization.

## 2.1 Camera Description

### 2.1.1 Side Panel Description



Serial NO.	Description
1	Lens mount
2	Bracket mounting holes, used to fix the camera to the bracket
3	Auto iris interface

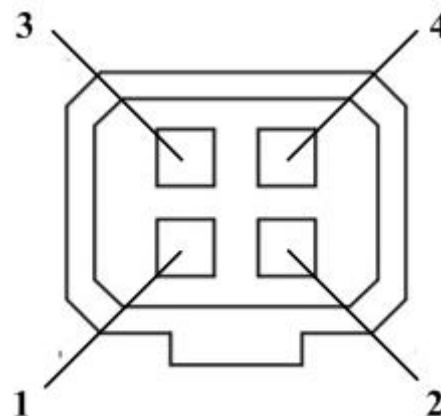


**NOTE:**

The type of auto-iris interface is square four-hole type, and the definition of each pin as shown:

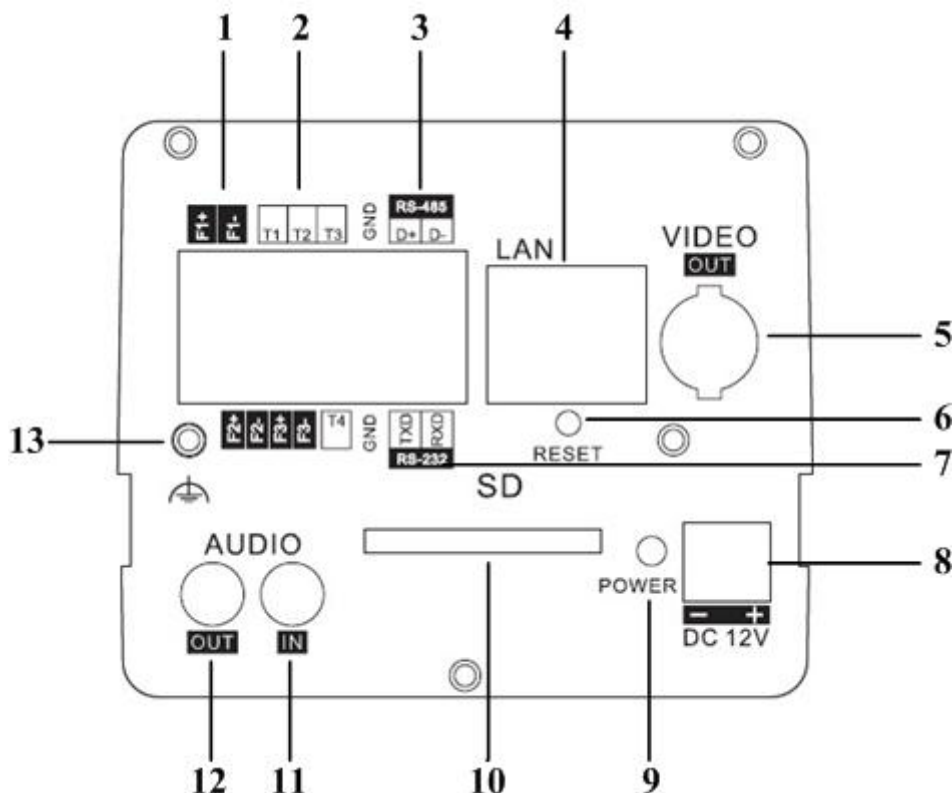
	Video	DC
1	Power	Damp-
2	NC	Damp+
3	Video	Drive+
4	GND	Drive-

Auto iris interface with video driving uses three pins: Power, Video and GND; Auto iris interface with DC driving uses four pins: Damp+, Damp-, Drive+ and Drive-.

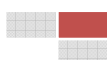


### 2.1.2 Rear Panel Description

Rear Panel of DS-2CD886BF-E and DS-2CD876BF:



Serial NO.	Description
1	F1+ F1-, F2+ F2- , F3+ F3-: Alarm output interface
2	T1, T2, T3, T4, GND: Alarm input interface

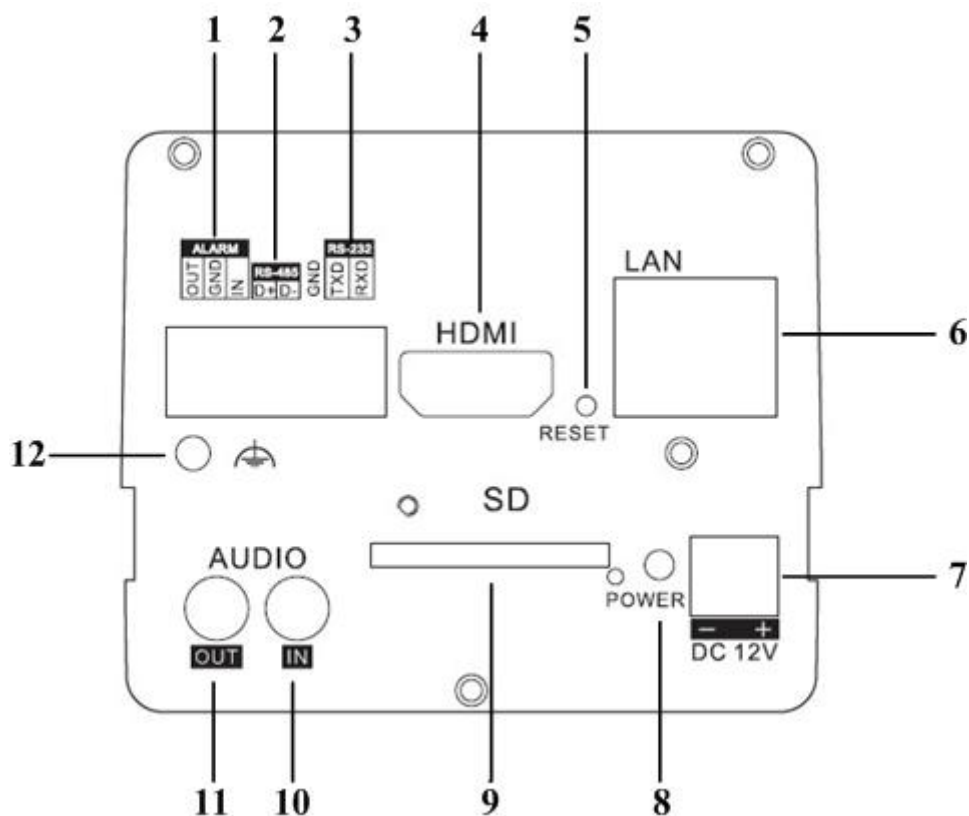


3	D+,D-: RS-485 interface
4	10M / 100M self-adaptive Ethernet interface
5	Video output interface
6	RESET: Reset all parameters to factory default settings
7	TXD , RXD,GND: RS-232 interface
8	Power supply
9	Power LED indicator, which turns red when power is applied to the unit
10	SD card slot
11	Audio input interface
12	Audio output interface
13	Ground

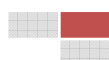
**NOTE:**

When the camera is power up, press the 'RESET' button for about 10 seconds, then all parameters, including user name, password, IP address, port number, etc., will be reset to the factory default settings.

Rear Panel of DS-2CD886MF-E and DS-2CD876MF:



Serial NO.	Description
1	ALARM OUT, GND: Alarm output interface ALARM IN, GND: Alarm input interface
2	D+, D-: RS-485 interface
3	TXD , RXD,GND: RS-232 interface
4	HDMI interface



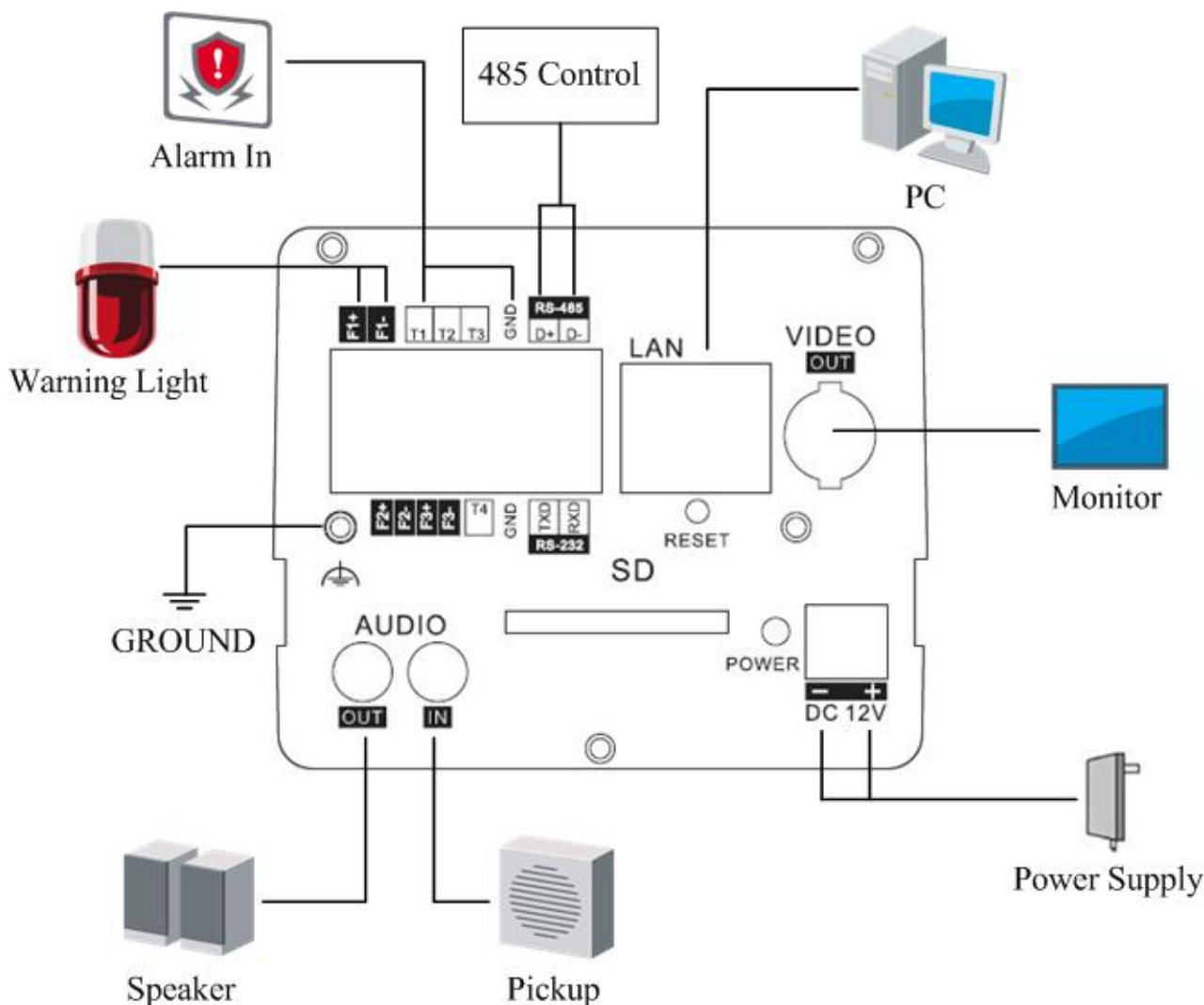
5	RESET: Reset all parameters to factory default settings
6	10M / 100M self-adaptive Ethernet interface
7	Power supply
8	Power LED indicator, which turns red when power is applied to the unit
9	SD card slot
10	Audio input interface
11	Audio output interface
12	Ground

**NOTE:**

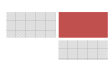
When the camera is power up, press the 'RESET' button for about 10 seconds, then all parameters, including user name, password, IP address, port number, etc., will be reset to the factory default settings.

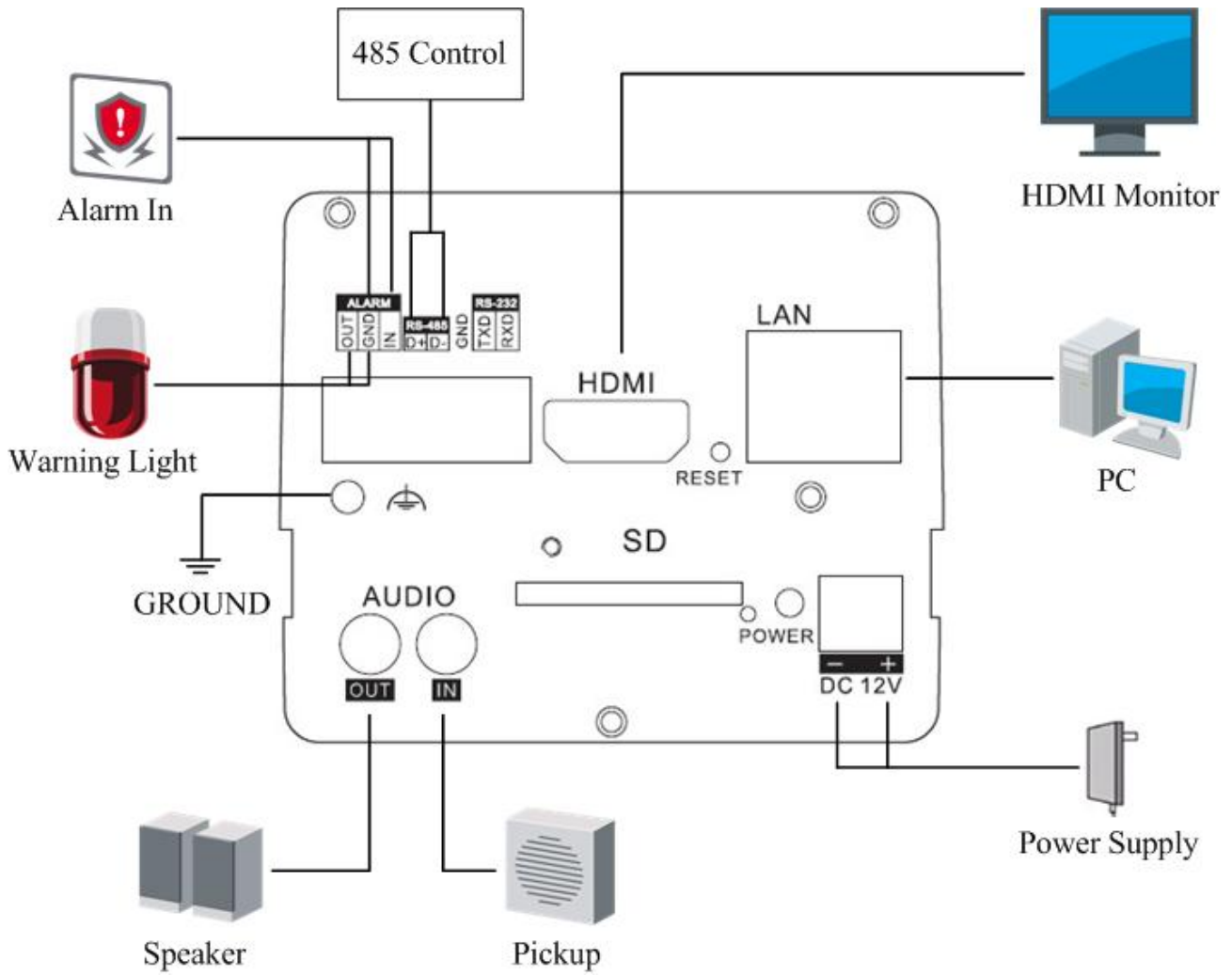
## 2.1.3 Camera Connection

Connection of DS-2CD886BF-E and DS-2CD876BF:

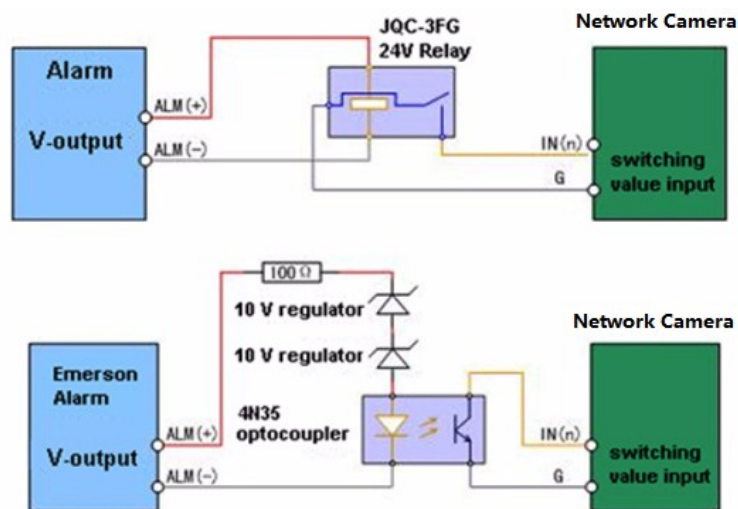


Connection of DS-2CD886MF-E and DS-2CD876MF:

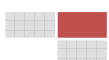


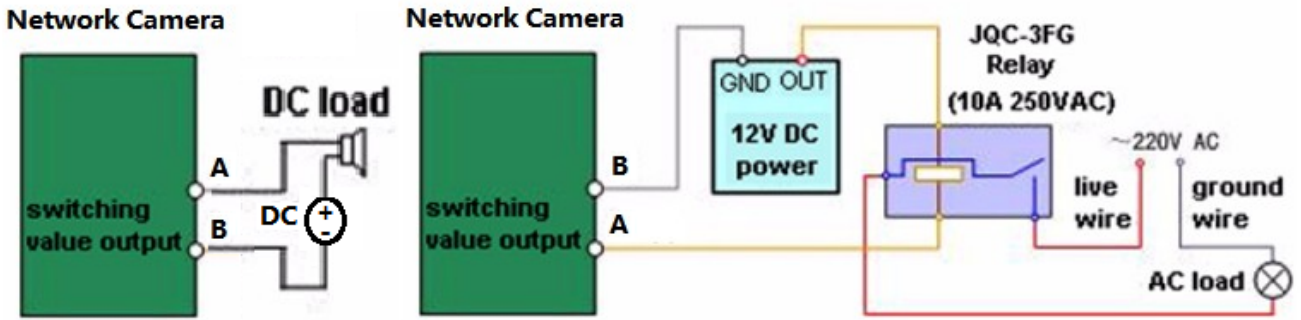
**Note:**

The alarm input is a NO/NC relay. If the input is not a NO/NC relay, follow the connection diagram below:

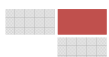


To connect to an AC/DC load, use the following diagram:





The alarm output is an on/off output that requires external power supply on connection. The external power supply shall be 12V DC/30mA, or use AC with external relays. Equipment damage or electric shock may cause if without relays.



## 2.2 Hardware Installation

Box camera can be fixed in both wall and ceiling, customers can choose different ways to install the camera according to their specific needs. The following section introduces the ceiling mounting, and the wall mounting follows the same way:

Step 1: Fix the camera mounting bracket to the ceiling.

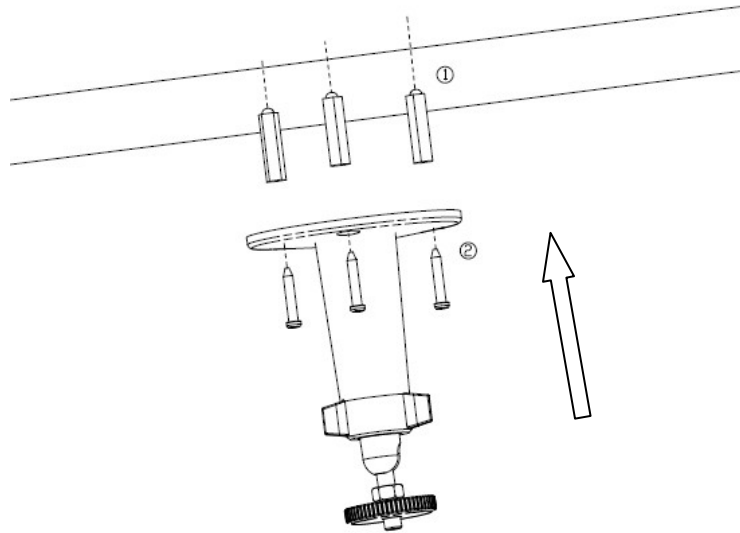
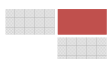


Fig 2.2.1 Fix camera mounting bracket

### NOTE:

If it is wall, you need to fix the expand bolt (note: the mounting hole of the expand bolt should align with the bracket) before fixing the bracket as ① in Fig 2.2.1 . If the wall surface is wooden, the part of ① in Fig 2.2.1 can be ignored and you can use the self-tapping screw to directly fix the bracket. Please note that the wall on which the camera is fixed should be able to bear at least three times the weight of the bracket and the camera.

Step 2: Screw the mounting hole to the mounting bracket, and then adjust the camera to the desired monitoring location and finally tighten the knob on bracket to secure the camera to the ceiling.



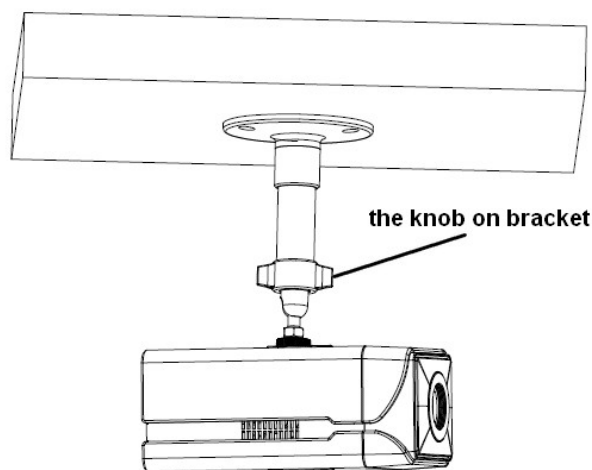


Fig 2.2.2 Fix the Camera

Step 3: Mount the camera lens: connect the VIDEO OUT interface of the camera to the debugging monitor, and adjust lens focus until you have obtained the clearest video images on the monitor, and then lock the lens. If required, loosen the knob on the mounting bracket and adjust the camera lens to the desired monitoring scene, and finally tighten the knob on bracket.

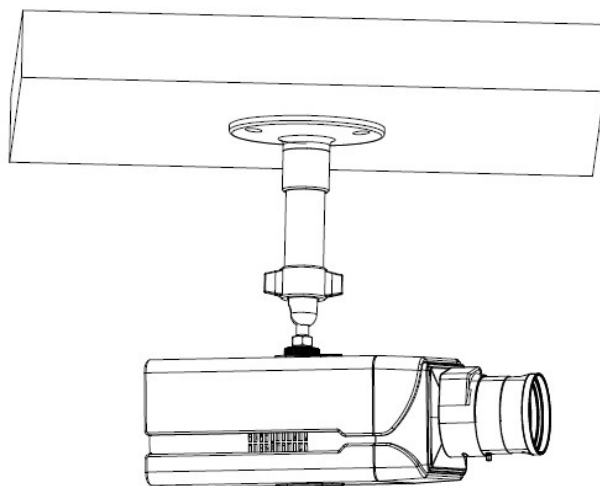
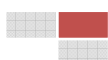


Fig 2.2.3 Mount and adjust Lens



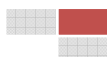


# Appendix Product Specification

## DS-2CD886BF-E

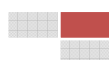
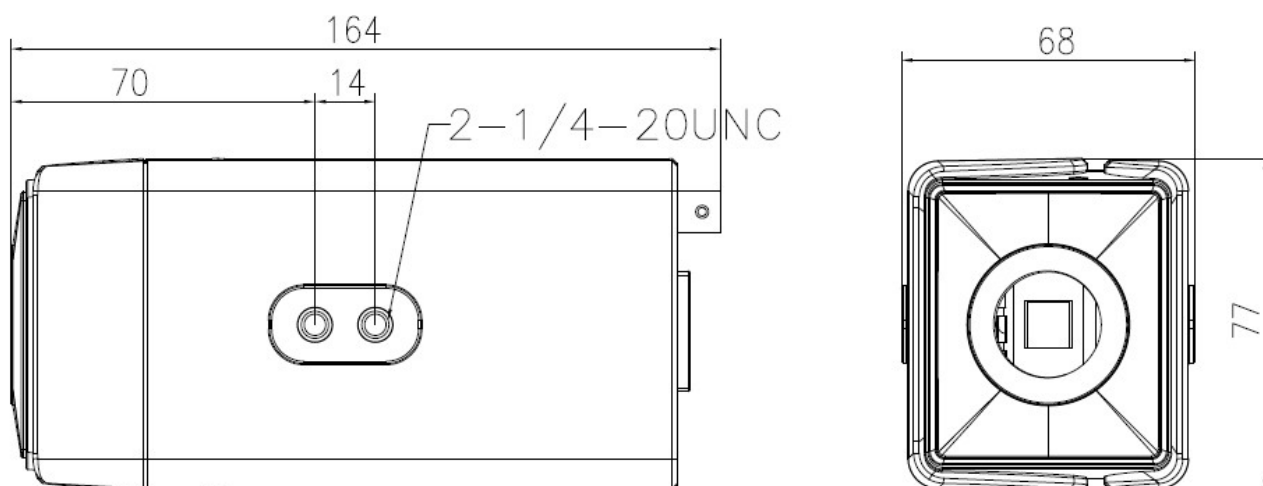
### Specification

Model	DS-2CD886BF-E
Parameter	5 Megapixel 1/2.5" CMOS ICR Day&Night Network Box Camera
<b>Camera</b>	
Image Sensor	1/2.5" Progressive Scan CMOS
Min. Illumination	Color: 0.6 Lux @ (F1.2, AGC ON) B / W: 0.08 Lux @ (F1.2, AGC ON)
Electronic Shutter	1s ~1/20,000s
Lens Mount	C/CS mount
Auto IRIS	DC Drive
Day&Night	IR cut filter with auto switch
<b>Compression Standard</b>	
Video Compression	H.264 /Mjpeg
Bit rate	32 Kbps~16Mbps
Audio Compression	G.711(G.722.1 optional)
<b>Image</b>	
Max. Image Resolution	2560×1920
Frame Rate	50HZ :8fps(2560×1920), 20fps(2048×1536),25fps( 1920×1080), 25fps( 1280×720) 60HZ :8fps(2560×1920), 20fps(2048×1536),30fps( 1920×1080), 30fps( 1280×720)
Image Settings	Saturation, Brightness, Contrast adjustable through client software or web browser
<b>Network</b>	
Storage	Support SD/SDHC, NAS( ISCSI optional)
Intelligent Alarm	Motion Detection, Video Tampering, Video Loss, Network Broken, IP address conflict, Storage exception
Protocols	TCP/IP,HTTP,DHCP,DNS,DDNS,RTP/RTSP,PPPoE, SMTP,NTP (SNMP,HTTPS, FTP,SIP, 802.1x, IPV6 optional)



Basic	Initial Set Button, Anti-flicker, Dual Stream, Heartbeat, Password Protection, Watermark
<b>Interface</b>	
Audio Input	1 channel 3.5mm audio interface (2.0 ~ 2.4Vp-p, 1kΩ)
Audio Output	1 channel 3.5mm audio interface (Line level, 600Ω)
Communication Interface	1 RJ45 10M / 100M self-adaptive Ethernet interface, 1 RS-485 interface, 1 RS-232 interface
Alarm Input	4 channel
Alarm Output	3 channel
Video Output	1Vp-p Composite Output (75Ω/BNC)
<b>General</b>	
Operating Condition	-10°C ~60°C, Humidity 90% or less(non-condensing)
Power Supply	DC12V±10% / PoE (AC24V optional)
Power Consumption	13W MAX
Dimensions(mm)	68×77×164(2.7''×3.0''×6.5'')
Weight	1000g(2.2lbs)

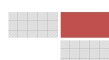
## Dimensions



## DS-2CD886MF-E

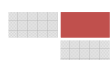
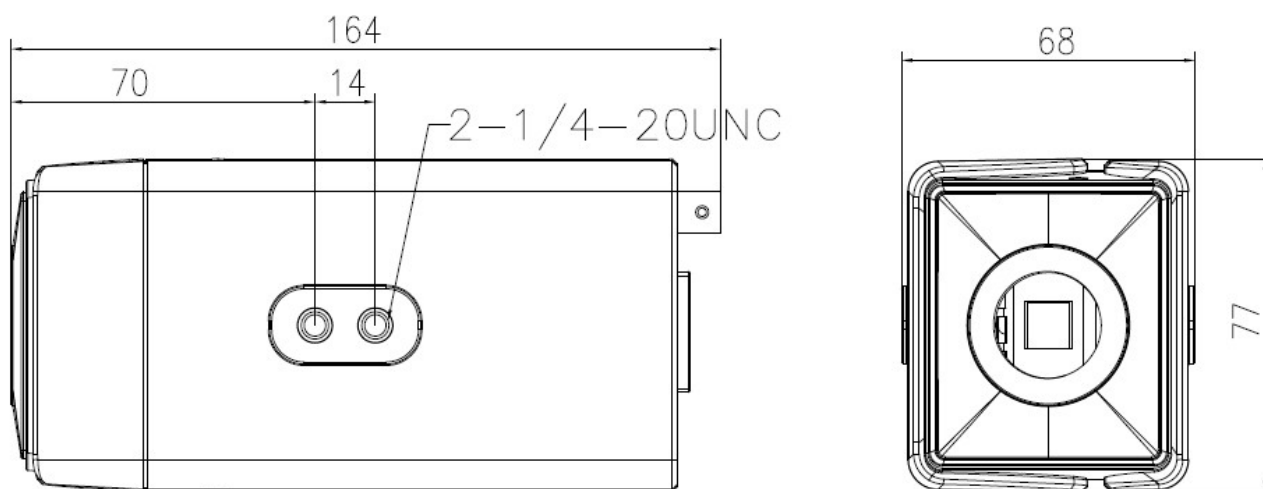
### Specification

Model	DS-2CD886MF-E
Parameter	5 Megapixel 1/2.5" CMOS ICR Day&Night Network Box Camera
<b>Camera</b>	
Image Sensor	1/2.5" Progressive Scan CMOS
Min. Illumination	Color: 0.6 Lux @ (F1.2, AGC ON) B / W: 0.08 Lux @ (F1.2, AGC ON)
Electronic Shutter	1s ~1/20,000s
Lens Mount	C/CS mount
Auto IRIS	DC Drive
Day&Night	IR cut filter with auto switch
<b>Compression Standard</b>	
Video Compression	H.264 /Mjpeg
Bit rate	32 Kbps~16Mbps
Audio Compression	G.711(G.722.1 optional)
<b>Image</b>	
Max. Image Resolution	2560×1920
Frame Rate	50HZ :8fps(2560×1920), 20fps(2048×1536),25fps( 1920×1080), 25fps( 1280×720) 60HZ :8fps(2560×1920), 20fps(2048×1536),30fps( 1920×1080), 30fps( 1280×720)
Image Settings	Saturation, Brightness, Contrast adjustable through client software or web browser
<b>Network</b>	
Storage	Support SD/SDHC, NAS ( ISCSI optional)
Intelligent Alarm	Motion Detection, Video Tampering, Video Loss, Network Broken, IP address conflict, Storage exception
Protocols	TCP/IP,HTTP,DHCP,DNS,DDNS,RTP/RTSP,PPPoE, SMTP,NTP (SNMP,HTTPS, FTP,SIP, 802.1x, IPV6 optional)
Basic	Initial Set Button, Anti-flicker, Dual Stream, Heartbeat, Password Protection, Watermark
<b>Interface</b>	
Audio Input	1 channel 3.5mm audio interface (2.0 ~ 2.4Vp-p, 1kΩ)



Audio Output	1 channel 3.5mm audio interface (Line level, 600Ω)
Communication Interface	1 RJ45 10M / 100M self-adaptive Ethernet interface, 1 RS-485 interface, 1 RS-232 interface
Alarm Input	1 channel
Alarm Output	1 channel
Video Output	1 HDMI interface
<b>General</b>	
Operating Condition	-10°C ~60°C, Humidity 90% or less(non-condensing)
Power Supply	DC12V±10% / PoE (AC24V optional)
Power Consumption	13W MAX
Dimensions(mm)	68×77×164(2.7''×3.0''×6.5'')
Weight	1000g(2.2lbs)

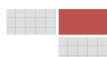
## Dimensions



## DS-2CD876BF

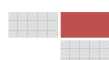
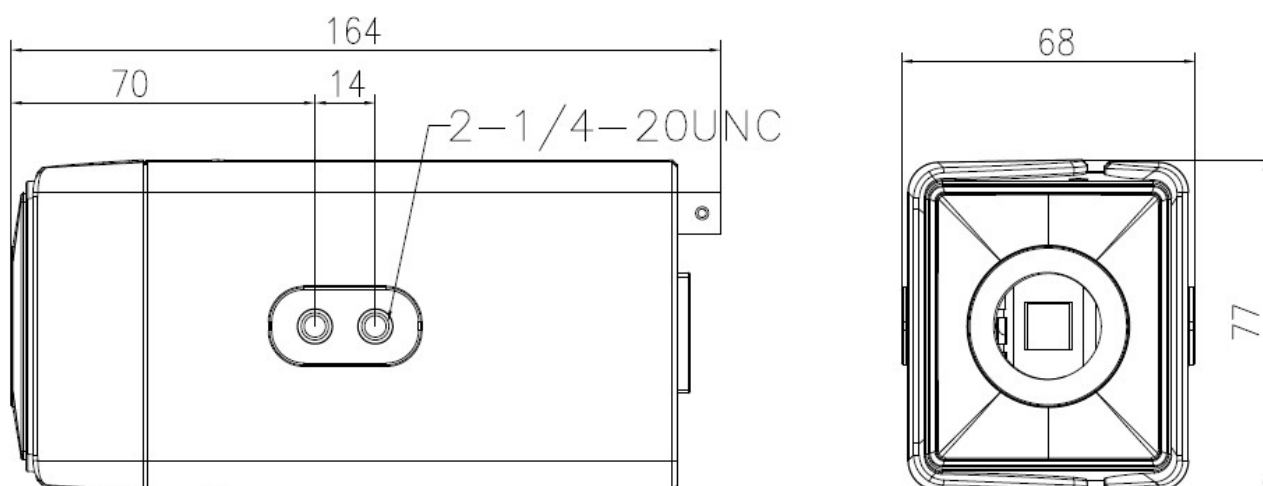
### Specification

Model	DS-2CD876BF
Parameter	2 Megapixel 1/1.8" CCD ICR Day&Night Network Box Camera
<b>Camera</b>	
Image Sensor	1/1.8" SONY Progressive Scan CCD
Min. Illumination	Color: 0.5Lux @(F1.2, AGC ON) B / W: 0.05Lux @(F1.2, AGC ON)
Electronic Shutter	1/25s ~1/30,000s
Lens Mount	C/CS mount
Auto IRIS	DC Drive
Day / Night	IR cut filter with auto switch
<b>Compression Standard</b>	
Video Compression	H.264/ MJpeg
Bit rate	32 Kbps~16Mbps
Audio Compression	G.711(G.722.1 optional)
<b>Image</b>	
Max. Image Resolution	1600×1200
Frame Rate	50HZ:25fps(1600×1200) 60HZ:25fps(1600×1200)
Image Settings	Saturation, Brightness, Contrast adjustable through client software or web browser
<b>Network</b>	
Storage	Support SD/SDHC, NAS (iSCSI optional)
Intelligent Alarm	Motion Detection, Video Tampering, Video Loss, Network Broken, IP address conflict, Storage exception
Protocols	TCP/IP,HTTP,DHCP,DNS,DDNS,RTP/RTSP,PPPoE, SMTP,NTP (SNMP,HTTPS, FTP,SIP, 802.1x, IPV6 optional)
Basic	Initial Set Button, Anti-flicker, Dual Stream, Heartbeat, Password Protection, Watermark
<b>Interface</b>	
Audio Input	1 channel 3.5mm audio interface (2.0 ~ 2.4Vp-p, 1kΩ)
Audio Output	1 channel 3.5mm audio interface (Line level, 600Ω)
Communication	1 RJ45 10M / 100M self-adaptive Ethernet interface, 1 RS-485



Interface	interface, 1 RS-232 interface
Alarm Input	4 channel
Alarm Output	3 channel
Video Output	1Vp-p Composite Output (75Ω/BNC)
<b>General</b>	
Operating Condition	-10°C ~60°C, Humidity 90% or less(non-condensing)
Power Supply	DC12V±10% (AC24V optional)
Power Consumption	13W MAX
Dimensions(mm)	68×77×164(2.7''×3.0''×6.5'')
Weight	1000g(2.2lbs)

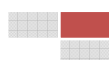
## Dimensions



## DS-2CD876MF

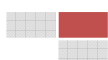
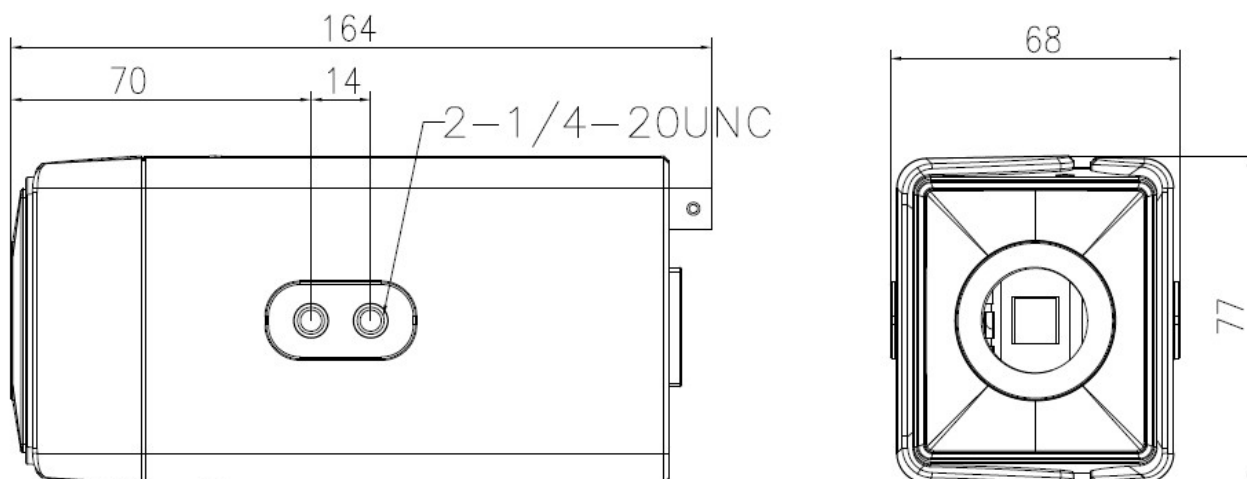
### Specification

Model	DS-2CD876MF
Parameter	2 Megapixel 1/1.8" CCD ICR Day&Night Network Box Camera
<b>Camera</b>	
Image Sensor	1/1.8" SONY Progressive Scan CCD
Min. Illumination	Color: 0.5Lux @(F1.2, AGC ON) B / W: 0.05Lux @(F1.2, AGC ON)
Electronic Shutter	1/25s ~1/30,000s
Lens Mount	C/CS mount
Auto IRIS	DC Drive
Day / Night	IR cut filter with auto switch
<b>Compression Standard</b>	
Video Compression	H.264/ Mjpeg
Bit rate	32 Kbps~16Mbps
Audio Compression	G.711(G.722.1 optional)
<b>Image</b>	
Max. Image Resolution	1600×1200
Frame Rate	50HZ:25fps(1600×1200) 60HZ:25fps(1600×1200)
Image Settings	Saturation, Brightness, Contrast adjustable through client software or web browser
<b>Network</b>	
Storage	Support SD/SDHC, NAS ( ISCSI optional)
Intelligent Alarm	Motion Detection, Video Tampering, Video Loss, Network Broken, IP address conflict, Storage exception
Protocols	TCP/IP,HTTP,DHCP,DNS,DDNS,RTP/RTSP,PPPoE, SMTP,NTP (SNMP,HTTPS, FTP,SIP, 802.1x, IPV6 optional)
Basic	Initial Set Button, Anti-flicker, Dual Stream, Heartbeat, Password Protection, Watermark
<b>Interface</b>	
Audio Input	1 channel 3.5mm audio interface (2.0 ~ 2.4Vp-p, 1kΩ)
Audio Output	1 channel 3.5mm audio interface (Line level, 600Ω)
Communication	1 RJ45 10M / 100M self-adaptive Ethernet interface, 1 RS-485



Interface	interface, 1 RS-232 interface
Alarm Input	1 channel
Alarm Output	1 channel
Video Output	1 HDMI interface
<b>General</b>	
Operating Condition	-10°C ~60°C, Humidity 90% or less(non-condensing)
Power Supply	DC12V±10% (AC24V optional)
Power Consumption	13W MAX
Dimensions(mm)	68×77×164(2.7''×3.0''×6.5'')
Weight	1000g(2.2lbs)

## Dimensions





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