Two-Megapixel Environment-Resistant IP Camera for Industrial Use

Model KC200NB1CX/ KC200NB1CN

Instruction Manual

Version 1.4

Before using this product, be sure to read this instruction manual.

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*The contents of this document are subject to change without prior notice.

Revision history			
Rev.	Revision date	Details of revision	Prepared by
1.0	2024.11.7	First edition	Shimada
1.1	2024.11.22	Correction of erroneous description	Shimada
1.2	2024.12.16	Minor corrections	Suzuki
1.3	2025.9.8	Minor corrections	Shimada
1.4	2026.7.27	Address changed	Suzuki

Safety Precautions

Meaning of indication

WARNING	**Indicates a hazardous situation which, if the precaution with this indication is not observed, could result in death or serious injury.**
CAUTION	**Indicates a hazardous situation which, if the product is erroneously handled by ignoring the precaution with this indication, could result in bodily injury and/or property damage.**

Meaning of symbol

	Indicates a "prohibited action."
	Indicates a "matter to which you should pay attention."

WARNING	
	If an abnormality, such as smoke, strange odor, abnormal sound, or entry of water or foreign matter in the product, occurs, immediately stop using the product. Use of this product with an abnormality or failure may cause fire or electric shock.
	Do not disassemble or modify this product. Failure to follow this instruction may cause fire, electric shock, or failure.
	Securely fix this product. Failure to follow this instruction may cause it to fall.
	Make sure that water and foreign matter do not enter the product. Failure to follow this instruction may cause fire, electric shock, or failure.
	Use the specified power voltage. Connect and disconnect the connection cable with the power supply turned off. Failure to follow this instruction may cause fire, electric shock, or failure.
	Connect cables according to the instructions. Do not damage, forcefully bend, or pull cables. Failure to follow this instruction may cause fire, electric shock, or failure.

⚠ CAUTION	
	Do not use this product in an environment out of its operating environmental range. Failure to follow this instruction may cause the product to fail.
	Do not drop this product or give a strong shock to it. Failure to follow this instruction may cause the product to break or fail.
	Do not install this product at a location subject to direct sunlight or heat for a long period. Failure to follow this instruction may cause the product to fail.
	Do not short-circuit the signal output. Failure to follow this instruction may cause the product to fail.

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1. Scope of Application

This instruction manual applies to the KC200NB1CX (with dustproof glass) and KC200NB1CN (without dustproof glass) models of the two-megapixel environment-resistant IP camera for industrial use.

2. Product Overview

This product is a network camera mounted with a 1/2.8" CMOS image sensor by SONY. A C-mount is employed at the lens mount, and by removing the waterproof C-mount conversion adapter that is equipped as standard, the mount can also serve as a CS mount. By connecting this product with a network video recorder (NVR), it is possible to record video. Transmission for up to 100 m is possible due to the M12 X-code cable. It is possible to output +24 V power from the camera. As the product is dustproof, waterproof, and oil resistant, it can be used even in a severe environment. The product can also be used in combination with our waterproof lens, waterproof lens cover, rotary window, waterproof lighting, etc., which exhibit environmental resistance.

When you use an S-mount lens, it may be necessary to select model KC200NB1CN, which is not equipped with dustproof glass, depending on the length of the mechanical back. When using S-mount lenses, please use the S-mount conversion adapter (Optional).

3. Configuration

- Camera Body ·····1
- Camera cap ·····1
- M8 connector cap ·····1
- Waterproof C-mount conversion adapter ·····1
- Camera cable ·····Optional

4. Specification

Table 1 Major Specifications

Initial connection settings	IP Address : 192.168.1.200 User name: admin Password: admin
Image Acquiring Device	1/2.8" Sony Starvis CMOS image sensor IMX307 Camera Bayer structure
Number of Effective Pixels	2 million pixels 1920 (H) x 1080 (V)
Imaging size	Diagonal 6.46 mm
Pixel Size	2.9 μm square pixel
Dustproof glass	KC200NB1CX: equipped KC200NB1CN: not equipped
Dustproof glass coating	KC200NB1CX: anti-reflection coating with IR cut function
Image Acquiring Method	Single-plate CMOS
Scanning Method	Non-interlaced (Progressive)
Resolution	1920x1080@30fps, 1280x720@30fps,640x480@30fps
Compression format	H.264+/ H.264/ M-JPEG
Bit rate adjustment function	CBR, VBR
Motion detection	Setting on the basis of 12 areas
Video adjustment function	Brightness, Contrast, Hue, Saturation, Sharpness, AGC, Flip, Mirror, Corridor Mode, Noise Reduction, BLC
Number of streaming	4
Privacy mask	Five areas at maximum
Synchronization Method	Internal Synchronization
Video Output	10/ 100 Base-T
Control Method	IPv6, IPv4, HTTP, HTTPS, SNMP, SSL, TLS , DNS , ICMP, IGMP, ARP, SNTP, QoS/DSCP, RTMP, IEEE 802.1X, RTSP/RTP/RTCP, TCP/IP, UDP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP, SAMBA, Bonjour, Onvif profile S
Time synchronization method	Unavailable
Gain (*1)	Up to 96 times
Shutter Function	Rolling shutter
Exposure time (*1)	1/33,000 seconds to 1/5 second
Interface	For Ethernet communication M12 X-code connector (socket) 8-pin connector M8 8pin A-code connector (socket) +24 V DC input × 1 Or +24 V DC × 1 (optional, generated from PoE receiving voltage) Digital input × 1 (no-voltage contact input) Digital output × 1 (open collector, maximum input of +24 V DC, maximum load of 100 mA) Strobe control output × 1 (optional, +3.3 V output) Initialization × 1 I2C×2 GND×1
Security	Password protection, IP address filtering, HTTPS encrypted data transmission, 802.1X port-based authentication for network protection, QoS/DSCP
Lens mount	C mount (when the waterproof C-mount conversion adapter is installed)
Flange back	KC200NB1CX : 17.526mm (±0.03 mm)

Sensor Center position accuracy	Within ±0.04 mm in X and Y directions with respect to the mount center Rotational direction is ±1° or less with respect to the bottom of the camera.
Trigger input	Digital input × 1 (no-voltage contact input)
Power output (optional)	DC+24 V (8.5W)
Remote focus adjustment function	Unavailable
Power supply input	48 V (13 W) when driven by PoE
Power consumption	4 W or less (when an M8 A-code connector +24 V DC output is not used)
Operating temperature/humidity (*2)	0°C to +50°C/20 %RH to 80 %RH (no condensation allowed)
Storage temperature/humidity	-30°C to +60°C/20 %RH to 90 %RH (no condensation allowed)
External dimensions	45(W) × 45(H) × 38(D) mm (excluding protrusions)
Mass	157±5 g (not including cap, lens, and tripod adapter)
Vibration Resistance	10G
Impact Resistance	75G
Vibration resistance	Described in “5. Test Standards.”
Impact resistance	Described in “5. Test Standards.”
EMC performance	Described in “5. Test Standards.”
Ingress Protection Rating	Equivalent to IP67 (when our waterproof lens, waterproof lens cover, rotary window, waterproof lighting, and others are installed)
Flame retardance	The resin exposed outside is either UL94 flame retardant grade V-0, 5VA or 5VB material.
Environmental Compliance	RoHS2 Compliance

*1 Depending on the gain value, exposure time, and ambient temperature, pixel deficits (white spots, black spots) and noise may be noticeable, but this is one of the characteristics of the image sensor and is not a malfunction or defect. Adjust the image quality by changing the gain value adjustment range and exposure time adjustment range, then use this product.

*2 As heat radiation may not be sufficiently performed depending on the mounting method, install this product by paying attention to the heat radiation from the bottom face of the camera.

*3 Complies with IEC 60068-2-6(JIS C 60068-2-6).

*4 Complies with MIL-STD-810H.

5. Appearance Drawing

(Unit: mm)

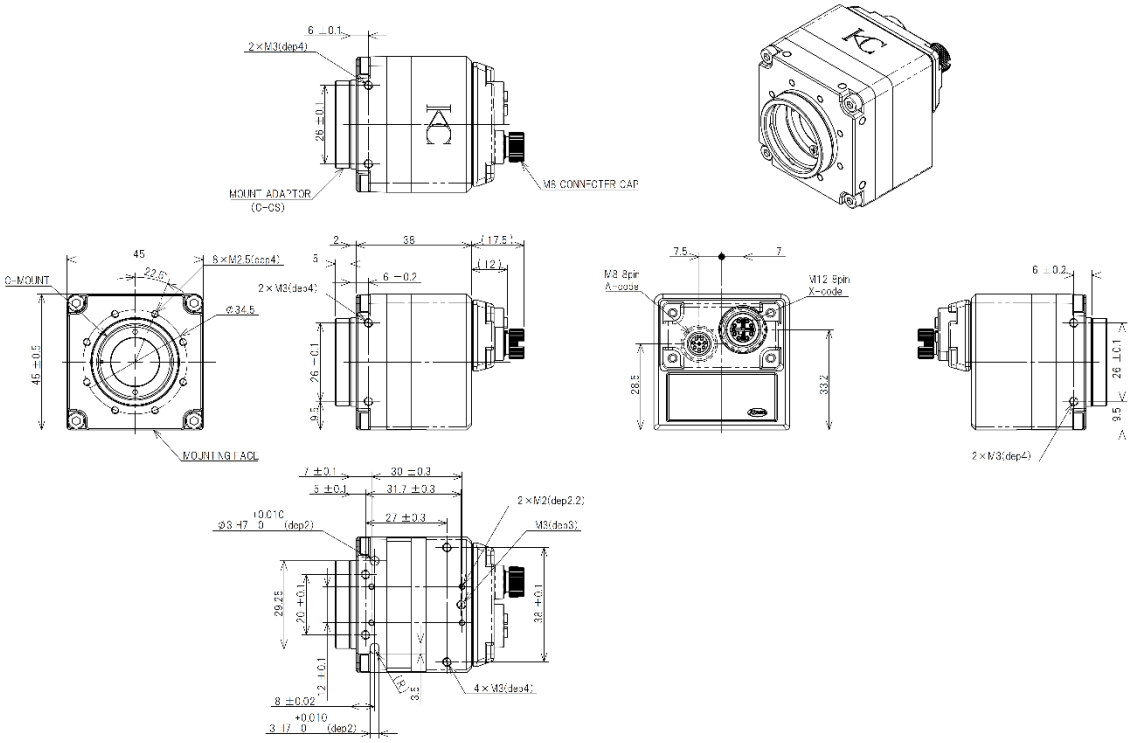

Fig. 1 Appearance Drawing

6. Location and name of each part

(Unit: mm)

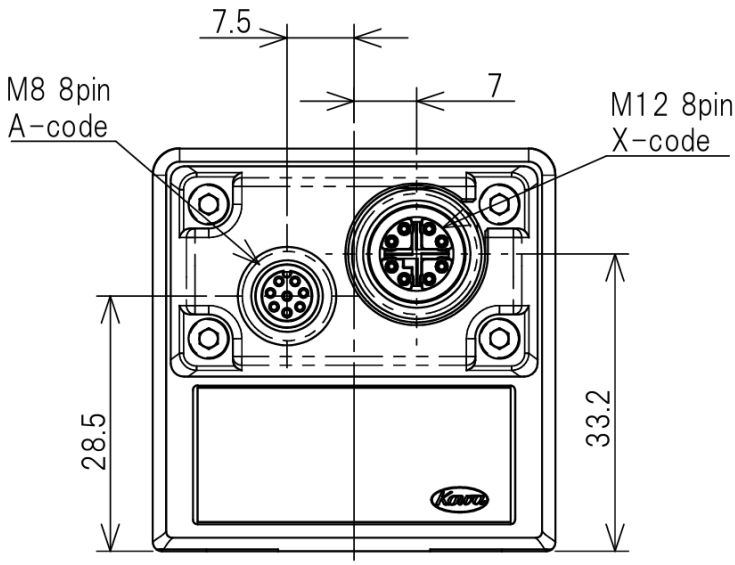

Fig. 2 : Back Surface

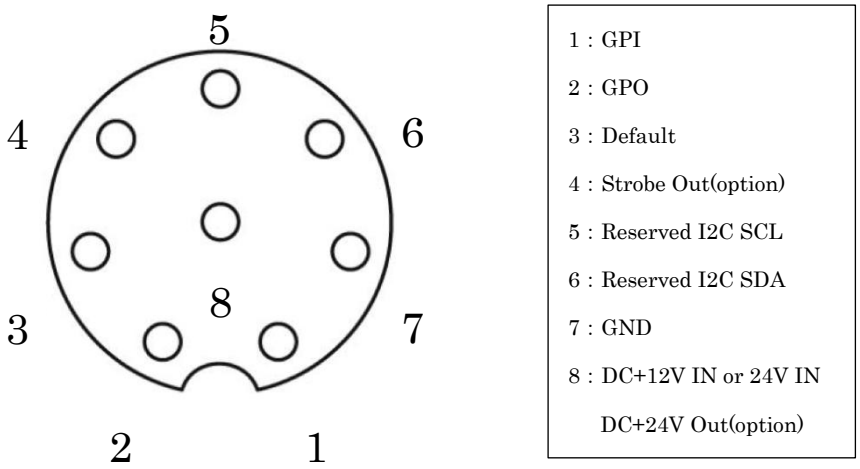

Fig. 3　M8 A-code connector pin assignment

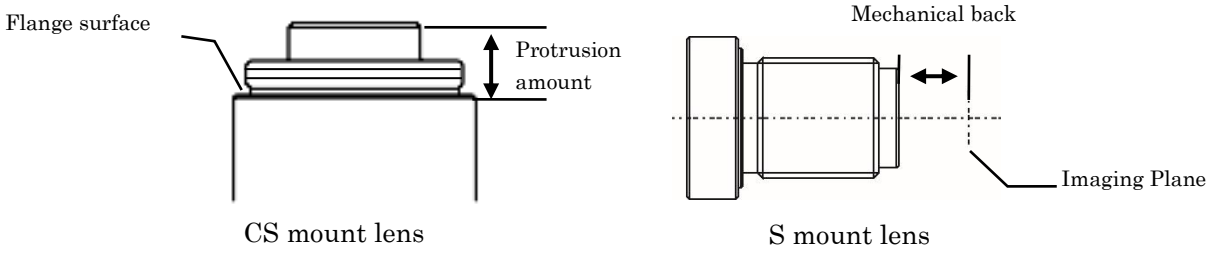

Fig. 4　Lens installation

* Use a C-mount lens with a protrusion from the flange surface of 10 mm or less. Use a CS-mount lens with a protrusion from the flange surface of 5mm or less.

* When you use an S-mount lens, separately prepare an S-mount conversion adapter. At the time of focus adjustment, pay attention not to interfere with the dustproof glass or image sensor. If the mechanical back of the S-mount lens is 7.5 mm or less, we recommend that you use model KC200NB1CN, which is not equipped with dustproof glass.

* When you use KC200NB1CN, as the image sensor is exposed, note that there is a risk of dirt entering in the product or dirt being captured in a shot image.

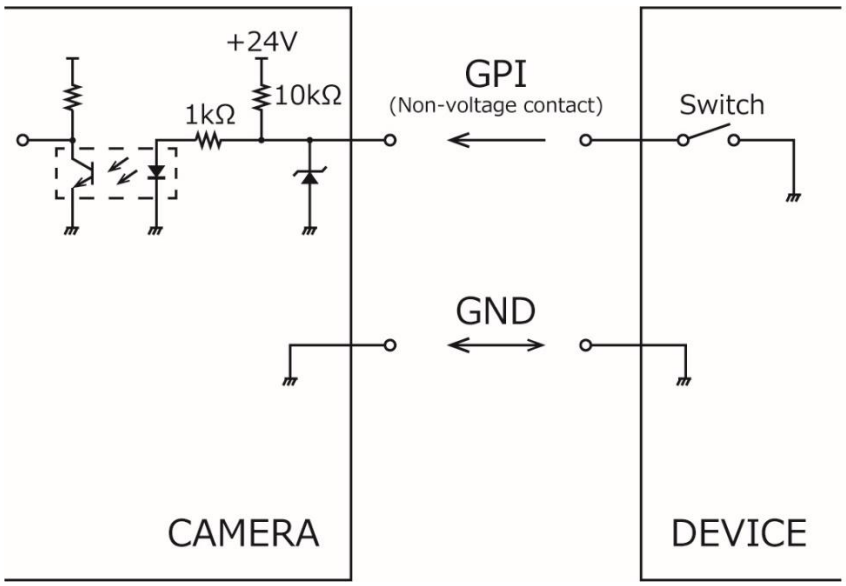

Fig. 5 Diagram of digital input terminal electric circuit of M8 A-code connector

7. Connection

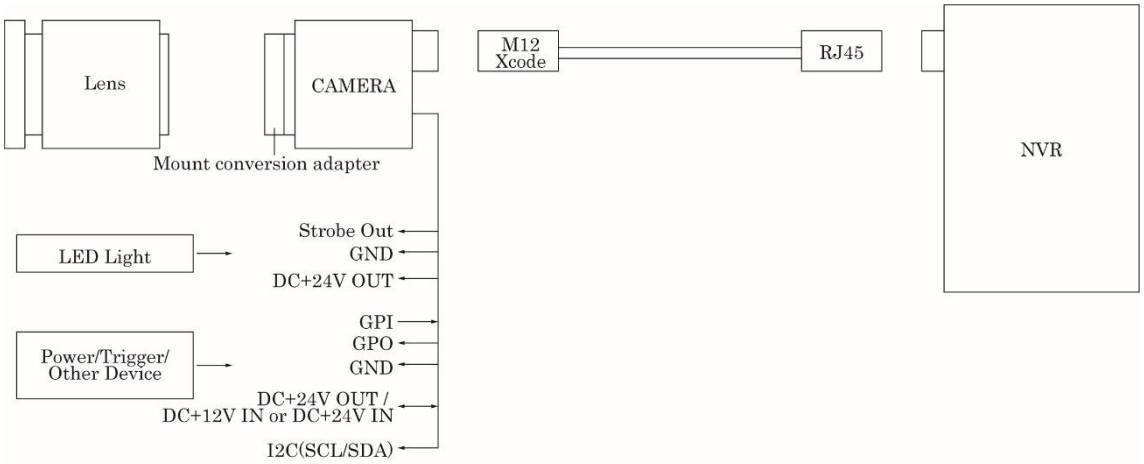

Fig. 6 Connection Example

8. Operating environment

NVR	NVR * When you use an NVR from another manufacturer, sufficiently conduct an operation check.
PC	OS：Windows 10 Browser: Microsoft IE 11, Chrome, Edge Hardware: equivalent to Intel Dual Core 2.8G, RAM 4 GB, Graphic card 128 MB, or greater
Mobile Device Support	iOS 9 or later, Android 5 or later

9. User Interface

Connect this camera to the network and enter the IP address of the camera in the web browser. If you enter the username and password in the displayed pop-up window and log in, the live video page automatically appears. However, the following screen appears (Fig. 7) upon first starting up only.

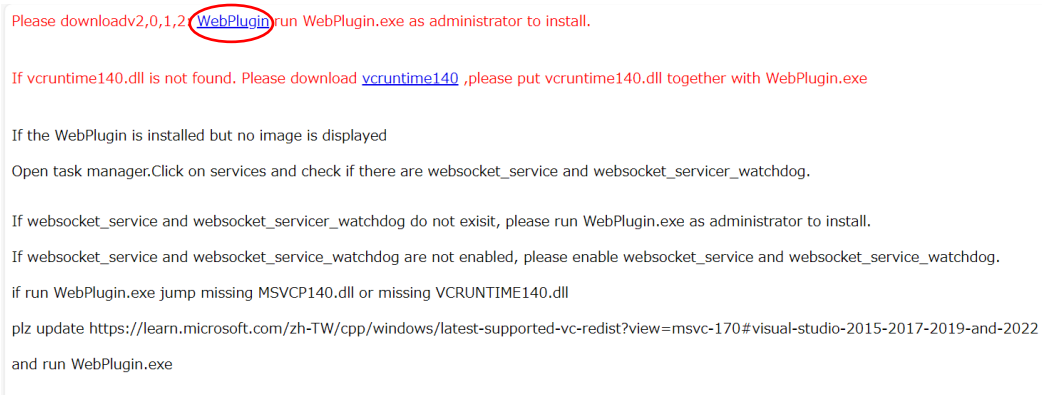

Fig. 7　Screen that appears upon first starting up

From the link indicated by a red circle in Fig. 7, download WebPlugin.exe. Then, execute the downloaded WebPlugin.exe with the administrator authority to install the application in the PC. When you execute the downloaded application with the administrator authority, the window shown in Fig. 8 appears. Select “Yes.”

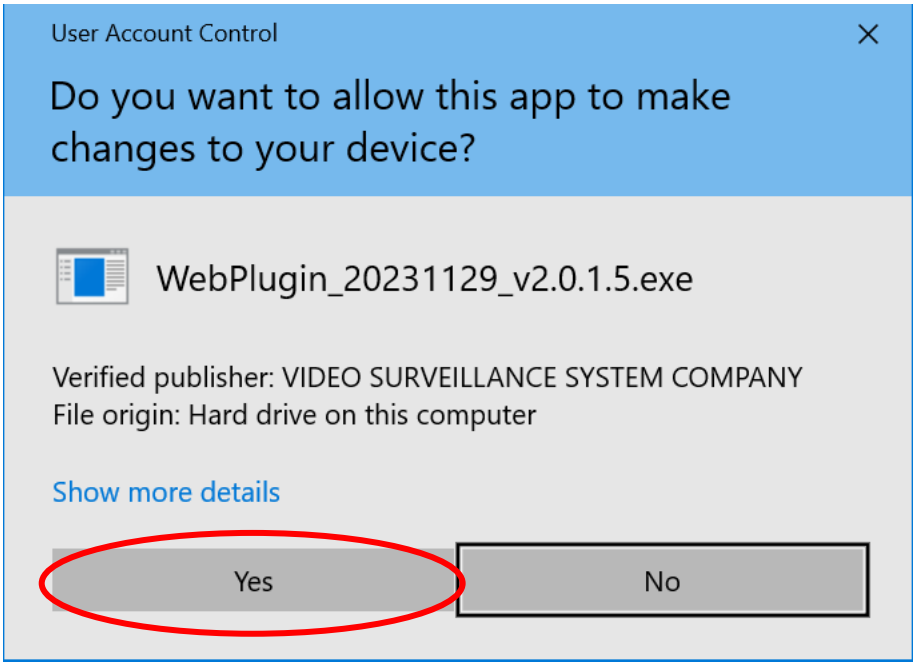

Fig. 8　Installation of WebPlugin

Once WebPlugin.exe has been normally installed, the following screen appears (Fig.9). If this screen does not appear, refresh the browser.

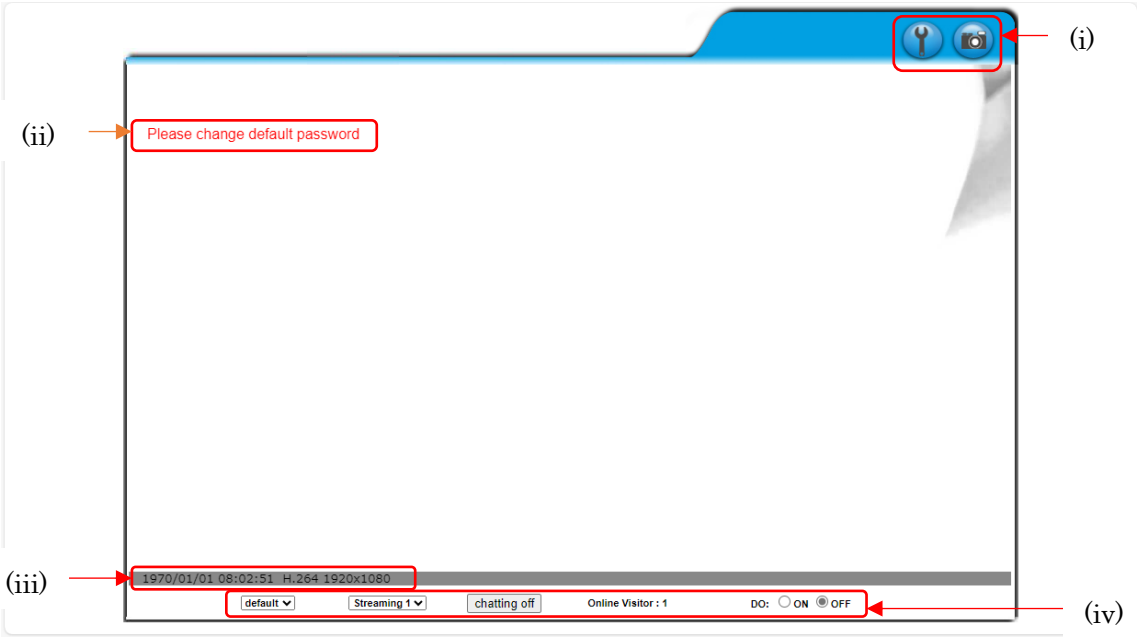

Fig. 9 Startup screen/Live video

<Explanation of startup screen>

(i) Clicking displays the setting screen, and clicking displays the snap shot preview window.

(ii) This appears when the password has not been changed from the default password.

(iii) The information of date, time, compression format, and resolution held by this IP camera is displayed.

(iv) default / ×1/2 / ×1 / ×2: it is possible to change the live display size.

Streaming 1 / 2: it is possible to change the camera stream to be displayed live.

Chatting on / off: it is possible to turn on/off the mischief detection function.

Online Visitor: this displays the number of users who are accessing this camera.

DO: it is possible to change the camera digital output on/off state.

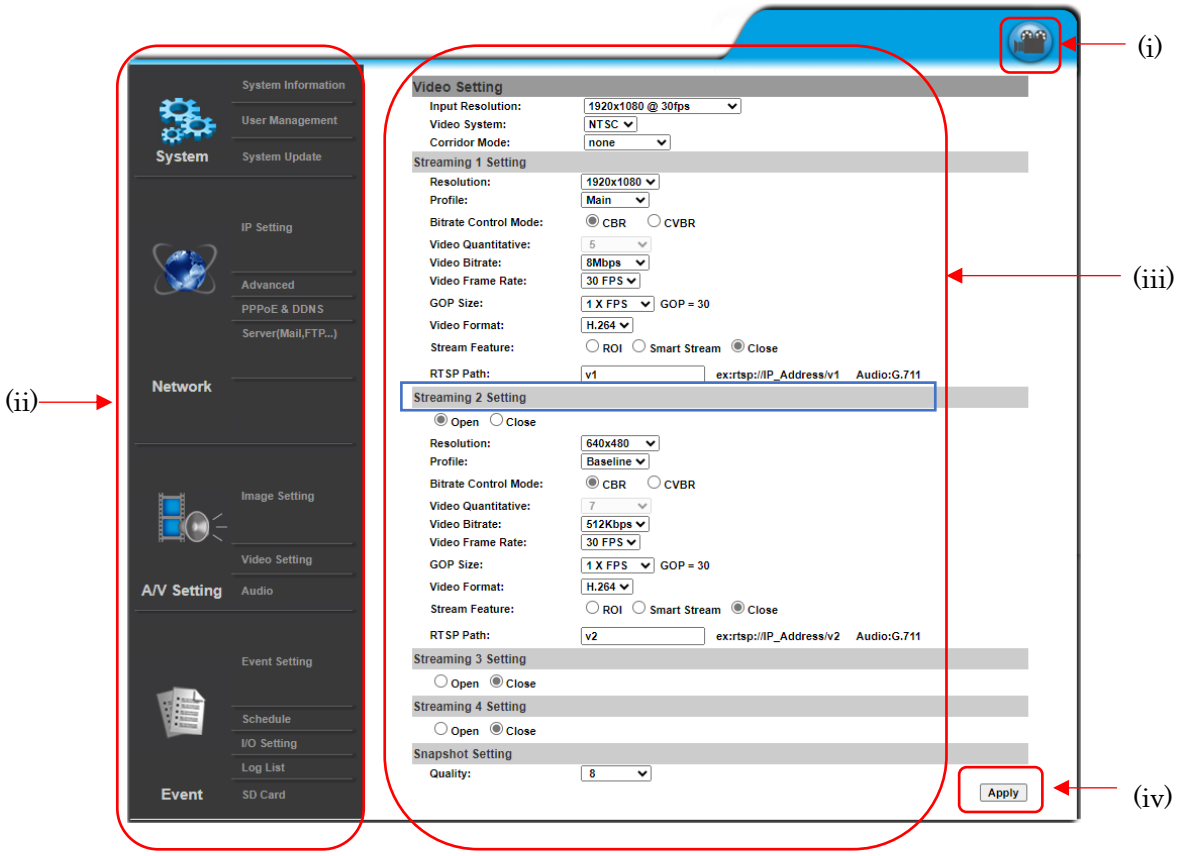

Fig. 10 Setting screen

<Explanation of setting screen>

(i) Clicking returns to the live video screen.

(ii) Setting items

Clicking any of these items displays the corresponding detailed setting screen in (3).

(iii) Detailed settings

The detailed settings for the item that was clicked in (2) are displayed here. In this section, it is possible to change the camera settings.

(iv) Clicking this button applies the changed settings.

9-1. RTSP connection method

When this IP camera is connected to an NVR from another manufacturer, the video may not be appropriately displayed. In this case, use of RTSP may make it possible to display and record the live video.

By entering the information shown below, for example, it is possible to make connection by RTSP.

ex) User name: admin, password: admin, IP address: 192.168.1.200, RTSP Path: when connecting to v1 camera by RTSP, connection can be made via the following path. The RTSP Path is indicated in the blue line in Fig. 10.

rtsp://admin:admin@192.168.1.200/v1

9-2. Video compression standard

You can change the video compression standard from Video Format. Please change the video compression according to the intended use. The following video compression are available for this camera.

Video Compression	H.264	MJPEG
Compression ratio	High	Low
Data size	Small	Large

H.264 captures images at a constant bitrate. Inter-frame predictive coding allows for high quality image capture even at low bit rates. In addition, when used with our NVR, it is possible to record for longer periods of time compared to MJPEG. MJPEG does not have bitrate control, and the bitrate fluctuates depending on the subject being captured. Therefore, when images with high-frequency components, such as complex patterns, are captured, the data size increases. In addition, since this camera compresses the images it captures, block noise may be noticeable in scenes with intense motion. However, since MJPEG does not use inter-frame prediction coding, block noise tends to be less noticeable in scenes with intense motion compared to H.264.

9-2-1. Video quality settings

This IP camera has two video quality settings for H.264: "Video Bitrate" and "Video Quality". In the “Video Bitrate” setting, the data size is adjusted to capture the image at the specified bit rate. In the “Video Quality” setting, the camera will capture images in order to keep the video quality constant, so the bit rate may vary depending on the subject.
* Normally, use the “Bit Rate” setting.

9-3. Time synchronization

The IP camera can display the time of day by activating the settings highlighted in red in Fig. 11. The position of the displayed time can be selected from top left, bottom left, top right and bottom right. However, this IP camera does not have an RTC function, and the time data is reset each time it is activated. In order to display the correct time data on the screen, the camera needs to be synchronized with an NTP server, PC, NVR, etc. The time can be synchronised via the settings shown in the blue box in Fig. 11. Other functions such as time synchronisation with a PC or manual time setting are also available.

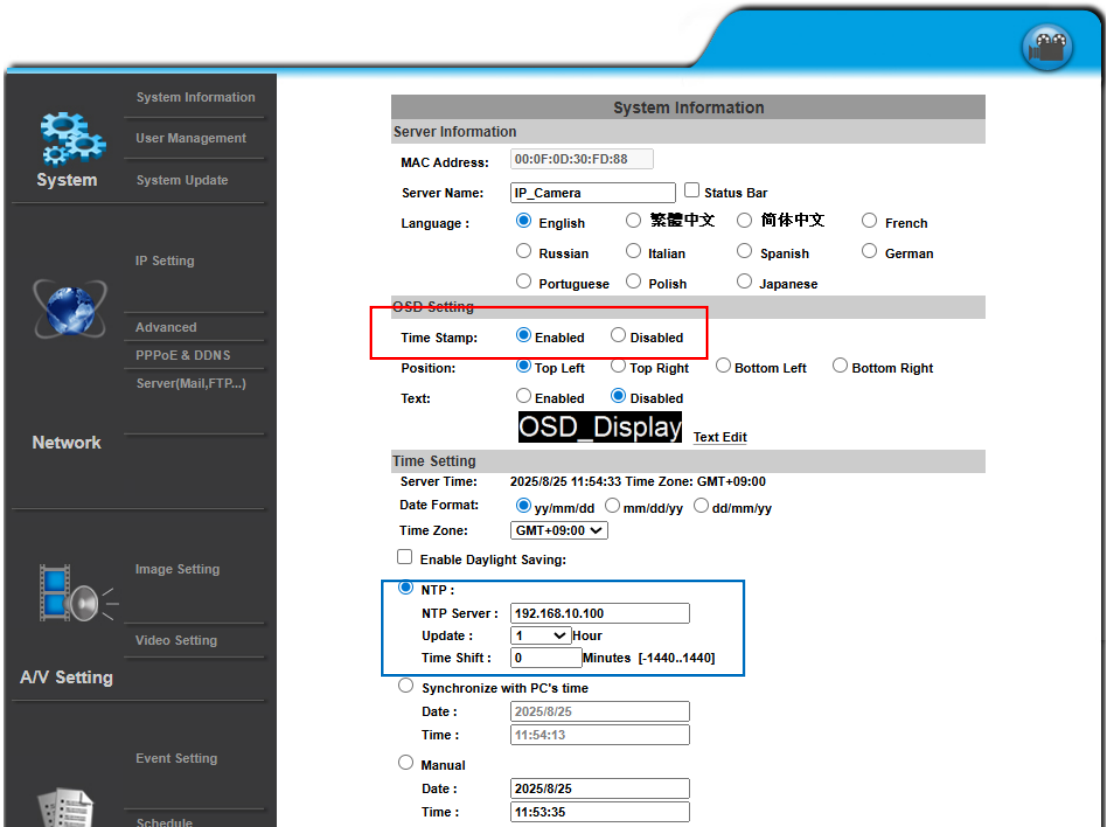

Fig. 11 Time synchronization

10. Disclaimer

・We do not take any responsibility for fires, earthquakes, floods, lightning strikes, acts by third parties, other accidents, customer intentional or negligence, misuse, or failures, damages, and damages (including items caused by third parties) caused by use under abnormal conditions.

・We are not responsible for any incidental damages (loss of business profit, interruption of business, change or loss of memory content, etc.) arising from the use of this product or inability to use this product.

・We are not responsible for any damage caused by not complying with the contents described in this manual.

・We are not responsible for any damage caused by malfunction, etc. due to combination with connected devices.

・The warranty period for this product is one year from the date of delivery.

・Do not disassemble or modify this product. Even within one year after delivery, the warranty will no longer be valid.

・We are not responsible for any failure or damage caused by maintenance, repair, etc. by the vendor from which you purchased this product or by anyone other than our company.

・Items not described in the specifications of this product are not covered by the warranty, and our company does not take any responsibility.

11.Federal Communications Commission

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.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

12. Environmental protection notice

At the end of its life span, this product may not be disposed as normal household waste. It must be disposed of at a collection center for recycling of electrical and electronic equipment or contact the manufacturer directly. The product label, inside the manual, or on the packing points to this information.

The materials are recyclable according to their labelling. Through reusing, material recycling, or other forms of utilization of old devices you are making an important contribution to the protection of the environment. Please ask your local administrator for the responsible waste disposal center or contact the manufacturer.

13. Others

The product specifications are subject to change without prior notice for product improvement. The functions, designs, etc. provided in this instruction manual are subject to change without prior notice. We kindly ask for your understanding.