

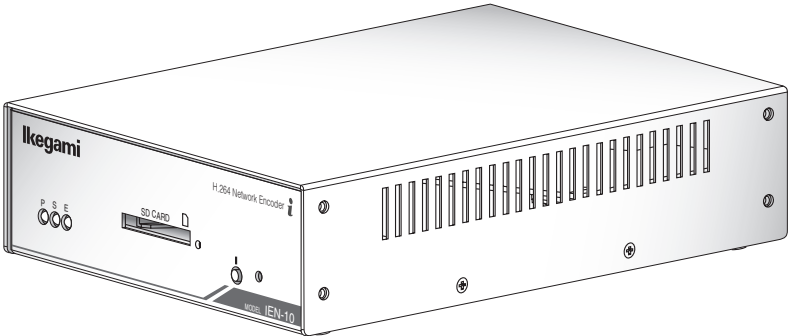
INSTRUCTION MANUAL

(SETUP INSTRUCTIONS)

H.264 NETWORK ENCODER

MODEL

IEN-10



OUTDOOR USE WARNING

WARNING — TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



Ikegami

Ikegami Tsushinki Co., Ltd.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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.

CAUTION;

ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USERS AUTHORITY TO OPERATE THE EQUIPMENT.

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Instructions for Disposal of Electric and Electronic Equipment in Private Household



**Disposal of used Electric and Electronic Equipment
(Applicable in the European Union and other European countries with separate collection systems)**

This symbol on the product, or in the related documents in the package, indicates that this product shall not be treated as normal household waste. Instead, it should be taken to a proper applicable collection point or depot for the recycling of electric and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent possible negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.

For more detailed information about recycling of this product, please contact your local city authority, your household waste disposal service or the place where you purchased the product.

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1. Introduction

Thank you very much for your wise choice of this product. Be sure to carefully read this manual before use in order to fully understand the product's functions and to keep the product at full capacity.

This Instruction Manual is the Introductory Section and provides an overview of this equipment and installation. For details on equipment settings, see the Instruction Manual (Application Instructions). The Instruction Manual (Application Instructions) can be downloaded at the following URL.

URL <http://www.ikegami.co.jp/en/products/security/download/index.html>

1-1. Handling precautions

Handling precautions

Be very careful to keep the product from impacts and vibrations. Otherwise it may get in trouble.

1. Installation location and conditions

- * Be sure to keep off the power while installing the product.
- * Never open the housing. Otherwise the internal precision parts may get damaged, resulting in failure or accident.
- * Install the product in a place within its ambient temperature range and without condensation.
- * Do not block nor cover the product's vent.
- * Make sure the supply voltage is as specified.
- * Handle the product with care. Impacts and vibrations may get it scratched or in trouble.
- * Do not install the product in a hot spot: not exposed to direct sunlight nor near a heating element, for example.
- * Do not install the product in a strong magnetic field or exposed to radio waves.
- * Do not place this product near a radio, TV set and other signal receiver. Such equipment may suffer from poor signal reception.
- * Do not move the product with the power on.
- * Use only the recommended SD card. SD cards other than the recommended card may not operate normally or result in a reduction in performance.
 - * The recommended SD card is listed in the Application Instructions.

2.Disclaimer

- * Ikegami assumes no responsibility for the following matters.
 - ① System impediment, malfunction or breakdown as a result of connecting with equipment from other companies.
 - ② Accidents or breakdowns due to mistaken usage or negligence.
 - ③ Disassembly or repair of equipment that is not recognized by Ikegami.
 - ④ Improper use by a third party of the surveillance images produced by this equipment, or damages resulting from such use.
 - ⑤ Loss of the setting contents.
 - ⑥ In addition, all damages resulting directly or indirectly in connection with this device.

* SD Card

- Please be aware that this company assumes no responsibility regarding guarantees in cases where images were not recorded due to problems with this device or the SD card.
- The following cases may involve destruction (loss) of recorded data. Please be aware that this company cannot assume any responsibility regarding damages due to destruction of data.
 - Mistaken usage method of SD card.
 - If the SD card was not correctly inserted in the device.
 - If the SD card has undergone electrical or mechanical shock or force.
 - If the SD card was removed or the device power was turned off during access to the SD card.

3. Copyrights and the protection of personal information

- * Take proper measures for delivering copyrighted and personal video materials.
- * The contents of information recorded on the SD memory card used with this device may correspond in some cases to private information. If this device is given to a third party due to disposal, transfer or repairs, please be especially careful about handling.

1-2. Checking the supplies

	Quantity
* Rubber foot	4
* Instruction Manual (Setup Instructions)	1

1-3. License for third party software

We are licensed to use the software made by third parties for this product. The license for each software shall be applicable to the software in question respectively and not to the whole software of this product.

Certain software used in this product and made by third parties are used based on the following licenses:

- * GNU General Public License Version 2 (GPL)
<http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>
- * GNU Lesser General Public License Version 2.1 (LGPL)
<http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html>
- * OpenSSL License
<http://www.openssl.org/source/license.html>
This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)
- * Original SSLeay License
<http://www.openssl.org/source/license.html>
This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)

The text of the license is included in the Instruction manual (Application Instructions).

1-4. Distribution of source code of free software

If you would like to purchase the GPL/LGPL software used in this product, please contact our sales division. In accordance with the licence terms, we will provide this at cost.

1-5. Limitations on Equipment Use

This equipment has its usage regulated by the **VC-1 and AVC/H.264 Patent Portfolio Licenses Concerning Personal and Non-Commercial Use**. This license should be observed in limiting use of this equipment to private use or uses that are non-profit.

For details consult the following:

<http://www.mpegla.com>

Reference: Actions permitted by VC-1 and AVC/H.264 images for private and non-commercial uses.

- (1) Only encoding of images to the VC-1 and AVC/H.264 for private uses or uses not having profit for purposes.
- (2) To be used for encoding for private applications or applicant that do not have profit as a goal, and for decoding of VC-1 and AVC/H.264 images from a supplier who has obtained a patent.

- Microsoft Windows XP, Internet Explorer are either registered trademarks or trademarks of Microsoft Corporation in the USA and other countries.
- Intel Pentium is a registered trademark or trademark of Intel Corporation in the USA and its subsidiaries in other countries.
- The symbols © and ™ are not included in the text.
- Microsoft product screen shots reprinted with permission from Microsoft Corporation.

2. Outline

This equipment is a PoE-compatible network encoder (box-type) that can compress both image and voice signals from conventional analog surveillance cameras into digital data to be delivered over a network. It uses the state-of-the-art H.264/AVC technology to compress image data for allowing high-quality images to be delivered at a highly efficient rate. By connecting this equipment to an existing surveillance camera system, the system networking can be accomplished with ease.

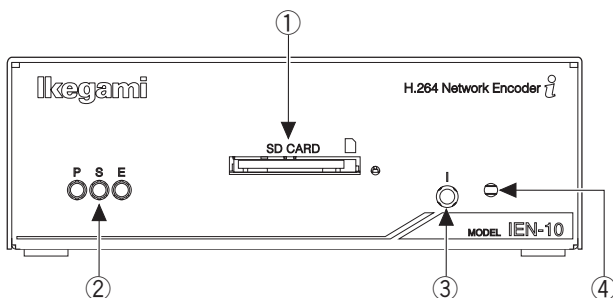
The equipment incorporates an outdoor-responsive-type motion-detection function, which is not sensitive to disturbances such as rocking vibrations of tree leaves, etc. to provide for an alarm system with least false alarms.

3. Features

- (1) Operates with high picture quality, high compression
With its high profile H.264 technology, this equipment can deliver high-quality images even though at high-compression rates of 64kbps ~ 8Mbps.
- (2) Outdoor-responsive-type motion detection
The equipment employs the outdoor-responsive-type motion-detection function not sensitive to rocking vibrations of tree leaves etc. to provide for an alarm system with least false reports.
- (3) Alarm functions
The Pre-alarm and post-alarm functions are incorporated to record the images preceding and following an alarm that has occurred.
- (4) Recording images on SD cards
Images can be recorded and stored on SD cards.
- (5) I/O function
Possible to carry out transmission/reception of contact signals via networks between this device and network encoders during connection.
- (6) External device control function
Control data received via the network can be output with the RS-232C and RS-485 to control external devices. In addition, the control data input from external devices using the RS-232C and RS-485 can then be transmitted via the network.
- (7) Maintenance
It is possible via the network to update the software or conduct maintenance by means of self-diagnoses.
- (8) PoE-Compatible
In environments where it is difficult to obtain power, it is possible to supply power via an Ethernet cable using a hub, etc. that operates with PoE (power over Ethernet).
- (9) Displaying images using the dedicated viewer
Images can be displayed by using the dedicated viewer software.

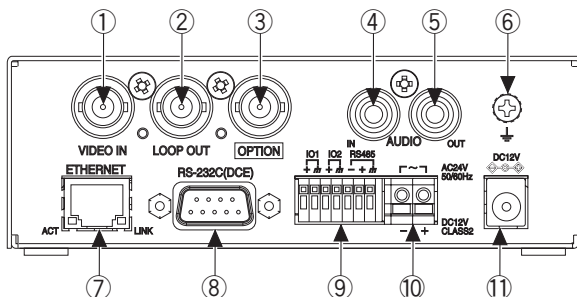
4. Names of parts and their functions

4-1. Front panel



- ① SD CARD Possible to insert an SD card. Also operates with SDHC card.
- ② LED displays
 - P (green) This LED is lit when the power is ON.
 - S (orange) This LED lights or blinks when the unit is operating.
 - E (red) This LED lights or blinks when an error is generated.
- ③ IP initialization switch If this switch is pressed during the initialization mode, it is possible to return the network settings to the initial settings.
- ④ All-setting initialization switch If this switch is pressed for at least three seconds during operations, the system goes to the initialization mode. If the initialization mode continues for five seconds, it is automatically released. If this switch is pressed during the initialization mode, all settings can be returned to the initial settings.

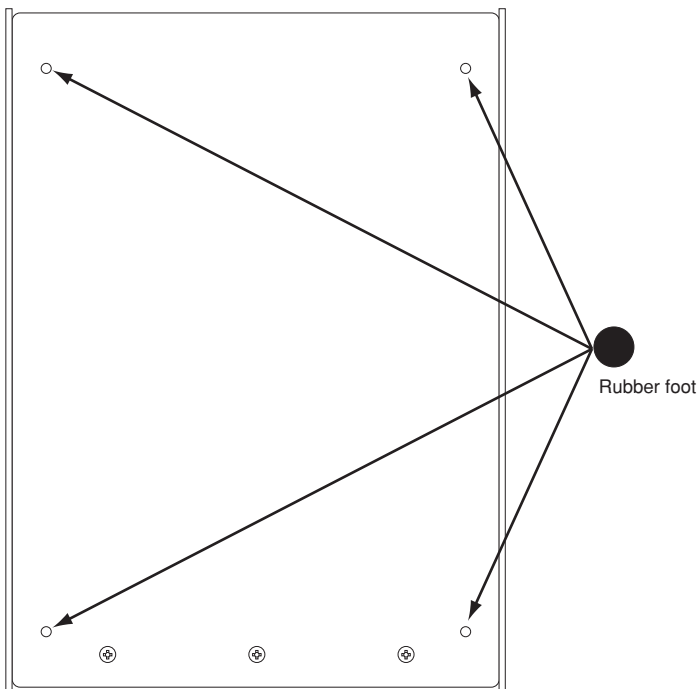
4-2. Rear panel



- ① VIDEO IN Video signals from camera, etc. are input here. It incorporates the automatic termination function.
- ② LOOP OUT This is a throughout terminal for VIDEO IN signals. If a coaxial cable is connected here, the termination function will be automatically cancelled.
- ③ OPTION Normally not in use.
- ④ AUDIO IN Audio input.
- ⑤ AUDIO OUT Audio output. (not in use)
- ⑥ Grounding terminal Ground equipment for safety's sake.
(special screw)
- ⑦ ETHERNET Wire for LAN cable (category 5e or higher). Operates with PoE.
- ⑧ RS-232C RS-232C communications possible (DCE).
- ⑨ Terminal block 1
 - IO1 Normally open non-voltage input or open collector output. Possible to set functions on input/output setting screen. For details, see the Instruction Manual (Application Instructions).
 - IO2 Same as IO1.
 - RS-485 Communications possible with Ikegami I-LAN compatible equipments.
- ⑩ Terminal block 2 Input of DC12V or AC24V (normally not in use). Do not simultaneously use the power source in item ⑪ (AC adapter). Do not input AC24V simultaneously with PoE.
* This installation should be made by a qualified service person and should conform to all local codes.
- ⑪ Power source The installation should be made by a qualified service person and should conform to all local codes. Do not use simultaneously with terminal block 2 in item ⑩.
Use an AC adapter attested in UL1310 and CSA-C22.2 No.223.

5. Attach Rubber Feet

In accordance with your operating environment, attach rubber feet as shown on the diagram below.



The bottom side of this product

6. Setting this equipment *PC setting*

Before installing this equipment, change the settings on this equipment to match the network you are using. The settings on this equipment can be changed by using Internet Explorer on your PC.

Before connecting this equipment with your PC, change the PC network settings. (First disconnect from existing network before setting).

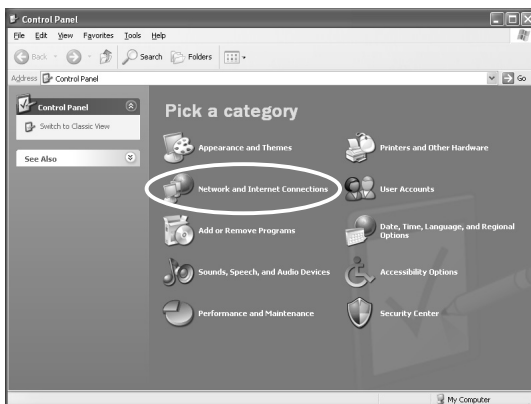
The PC setting changes are described on the Windows XP screen.

To set an IP address, start with the properties of the local area network connection.

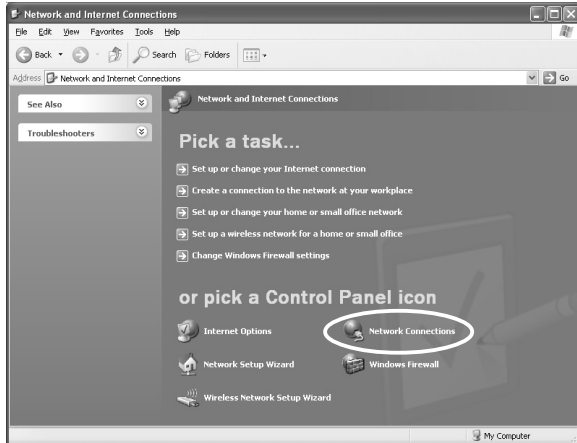
- ① Getting the “LAN Connection” properties displayed
Click on the start button first and then on the control panel.



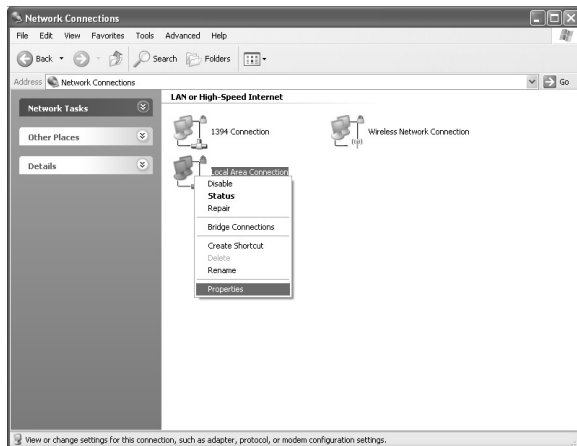
- ② Click on “Network and Internet Connections”.



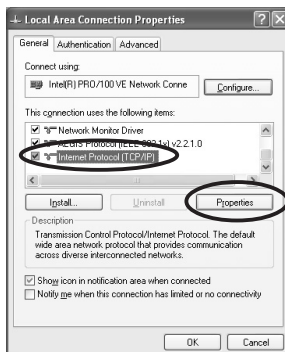
③ Click on “Network Connections”.



④ Right-click on “Local Area Connection” and click on “Properties”.



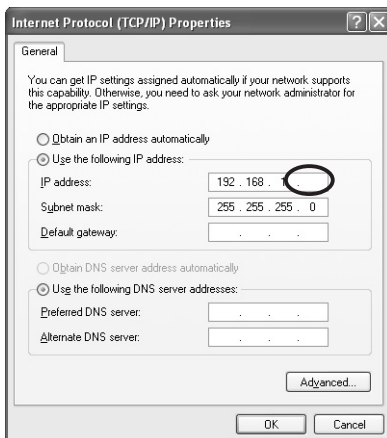
⑤ Getting the “Internet Protocol (TCP/IP)” properties displayed
Click on “Internet Protocol (TCP/IP)” first and then on “Properties”.



⑥ Click on “Use the following IP address” and enter the address.

* To return to the original IP address after setting up this equipment, preferably note down the current IP address.

- Set the IP address at “192.168.1.○” (not 100 for the ○ blank).
- Set the subnet mask at “255.255.255.0”.



For reference

The initial values of the IP addresses for products operating with the Ikegami network are as follows.

Network Camera	:	192.168.1.100
Network Decoder	:	192.168.1.150
Network Recoder	:	192.168.1.200

Initial settings (IEN-10)

URL	:	http://192.168.1.100/
User name	:	admin
Password	:	1
IP address	:	192.168.1.100
Subnet mask	:	255.255.255.0
Gateway	:	192.168.1.1
MTU	:	1454
HTTP port	:	80

PC operating environment

To carry out settings and maintenance on this device, you must have a PC that satisfies the following conditions.

- Microsoft Windows XP
- Internet Explorer 6.0 or higher
- Intel Pentium 4 2.0GHz or higher
- Memory 256MB or higher (512MB or higher recommended)

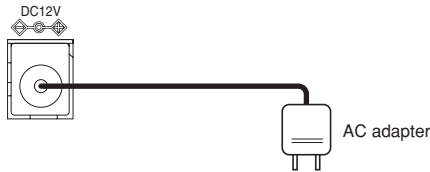
7. Setting this equipment *Turning on the power*

There is no power switch on this equipment. It is possible to supply power for this equipment with the following three methods: (1) AC adapter, (2) terminal block, (3) PoE.

When the power is inserted, the LED display P (green) lights and operation starts after about 40 seconds.

7-1. Power supply with AC adapter

When supplying power to this equipment with an AC adapter, connect as shown in the figure below. Prior to connecting, first make sure that no power is being supplied to the equipment with another method.

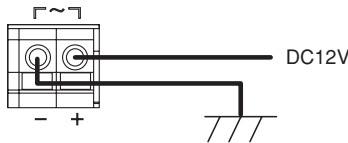


- Use an AC adapter attested in UL1310 and CSA-C22.2 No.223.
- Use an AC adapter which outputs DC12V/1A.
- Do not use simultaneously with terminal block 2.
- When power has been supplied simultaneously with PoE, the method that was turned on first has priority.

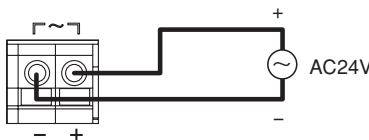
7-2. Supplying power from terminal block 2

It is possible to supply DC12V or AC24V power from terminal block 2. When supplying power to this equipment from terminal block 3, connect as shown in the figure below. Prior to connecting, first make sure that no power is being supplied to the equipment with another method.

When supplying DC12V.

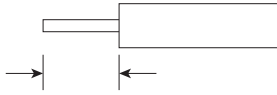


When supplying AC24V.



Power cable

Remove about 10 mm from the end of the power cable. The thickness of cables for connection should be AWG24-12.

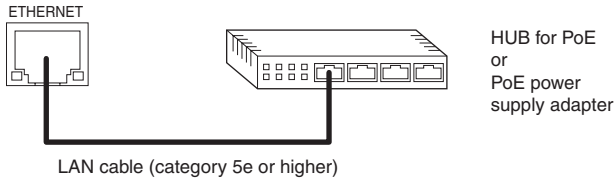


Remove about 10 mm.

- Do not use simultaneously with AC adapter.
- When supplying AC24V, do not use simultaneously with PoE.
- When DC12V power has been supplied simultaneously with PoE, the method that was turned on first has priority.

7-3. Supplying power with PoE

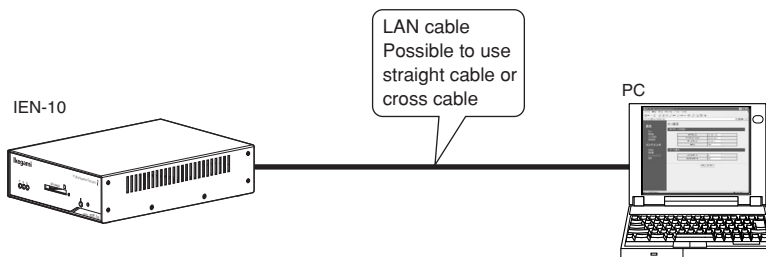
When supplying power to this equipment with PoE, connect as shown in the figure below. Prior to connecting, first make sure that no power is being supplied to the equipment with another method.



- PoE operates with Type A or Type B.
- Do not use simultaneously with AC24V from terminal block 2.
- If DC12V from the AC adapter or terminal block 2 is supplied simultaneously with PoE, the method that was turned on first has priority.

8. Setting this equipment *Connect the equipment to the PC*

When connecting this equipment to the PC, connect with the LAN cable.



Enter this equipment's URL in the Internet Explorer address bar. The initial setting is "http://192.168.1.100/".



A pop-up window opens and you are asked for the user name and password. Enter the administrator's user name as well as the password, and click on . The initial settings are "admin" for the administrator's user name and "1" for the password. The operator's user name is not registered.



When the user name and password are correct, the monitor screen shows up.

9. Setting this equipment *Making the IP address and other settings*

When connecting this equipment to your PC via Internet Explorer, it is possible to change settings and conduct maintenance on this equipment.

Changing the IP address (Default setting: 192.168.1.100) of this equipment is possible by following the descriptions under "Setting" Mode "IPv4."

* For details consult the Instruction Manual (Application Instructions).

When selecting "IPv4" from menu, it is possible to change the equipment network information.

The Instruction Manual (Application Instructions) can be downloaded
from the following URL.

URL <http://www.ikegami.co.jp/en/products/security/download/index.html>

- **Easy Setting Tool**

This is a handy tool for easy changing of the IP address of this equipment and other equipments operating with an Ikegami. It is also possible to change the IP address after installing the equipment.

You can download the tool (software) from the below website. Before use, carefully read the "Easy Setting Tool" instructions (Help on Toolbar).

URL http://www.ikegami.co.jp/en/products/security/tool/easy_setting_tool.html

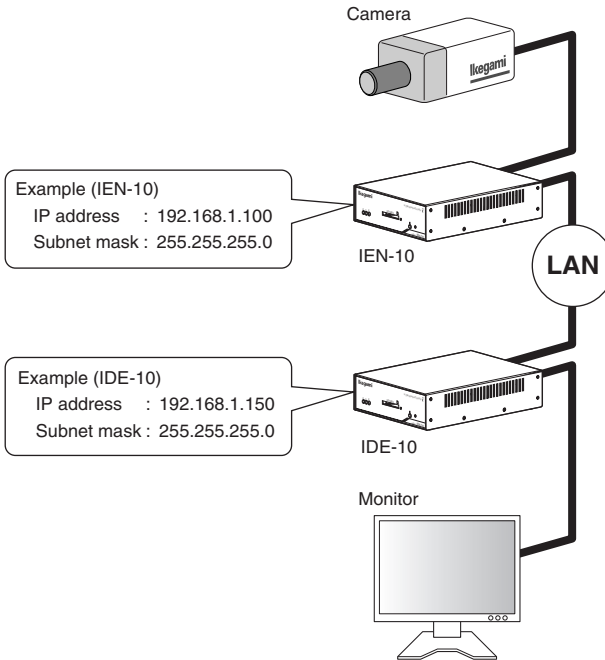
10. Installation *Connecting the LAN cable*

NOTE

The IP addresses used in the figure are setting examples. You should actually set the correct values according to the network environment you are using. In particular, do not connect to the Internet with the IP address used in the figure. The correct setting value should be obtained from the network manager or the ISP (Internet Service Provider) for which you are contracted.

10-1. Installing on the same network

This is an example of installing this equipment and the IDE-10 on the same network. Be sure to correctly set the IP address and subnet mask.

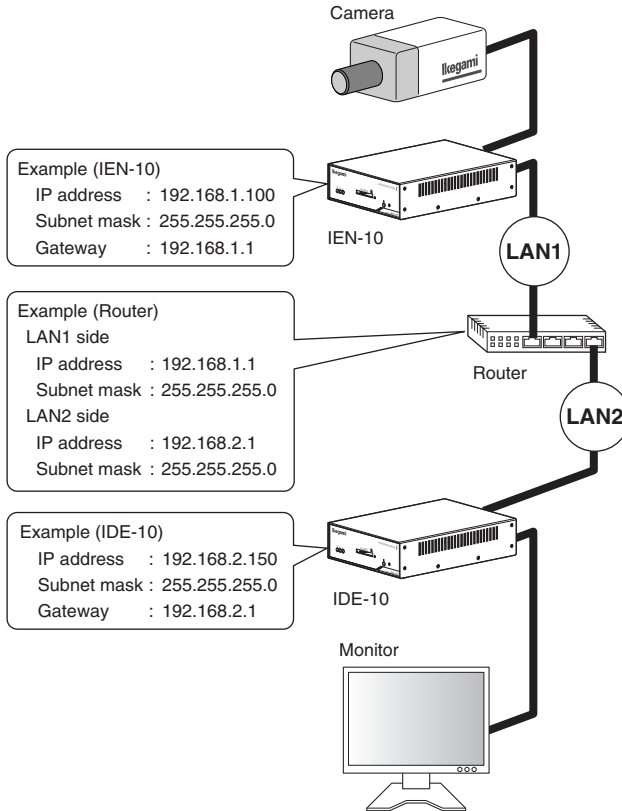


10-2. Installing on different networks

This is an example of installing this equipment and the IDE-10 on different networks. Be sure to correctly set the IP address and subnet mask, and the gateway IP address.

This equipment uses RTSP (TCP) and RTP/RTCP (UDP) for transmission and reception of video and audio. Carry out setting of the router firewall and port forward for communications with these protocols.

For details consult the Instruction Manual (Application Instructions) and the manual of the router you are using.

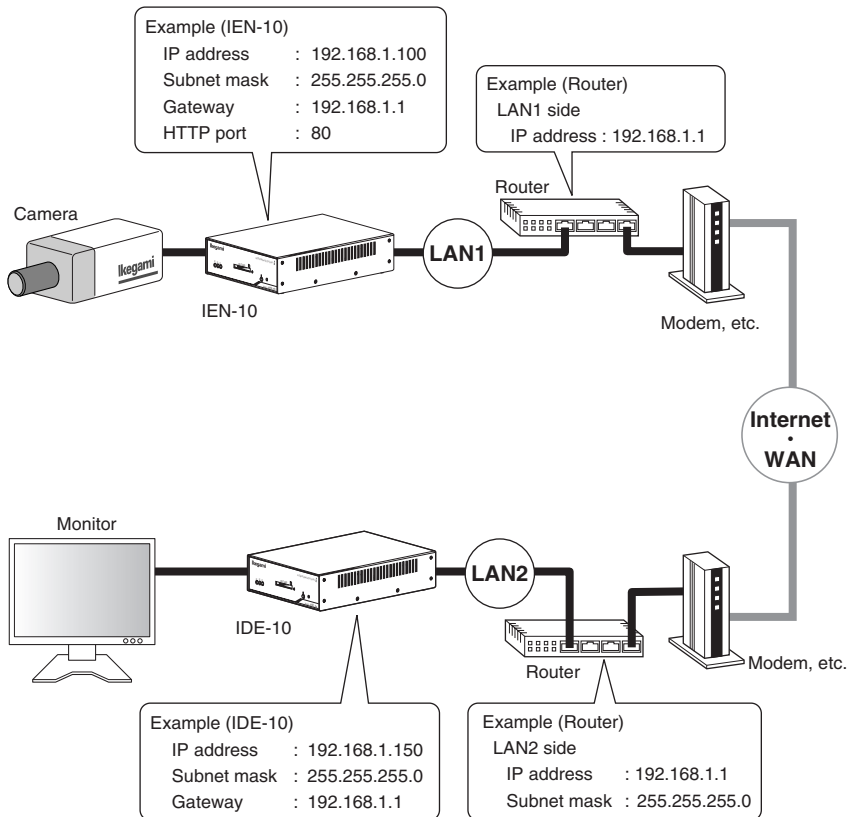


10-3. Installing in separate locations with use of Internet and WAN

This is an example of installing this equipment and the IDE-10 using the Internet and WAN for installation in different locations. Be sure to correctly set the IP address and subnet mask, and the gateway IP address.

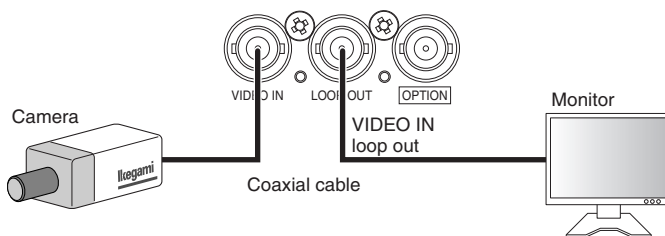
This equipment uses RTSP (TCP) and RTP/RTCP (UDP) for transmission and reception of video and audio. Carry out setting of the router firewall and port forward for communications with these protocols.

For details consult the Instruction Manual (Application Instructions) and the manual of the router you are using.



11. Installation *Connecting to video/audio*

11-1. Connecting to VIDEO IN/LOOP OUT

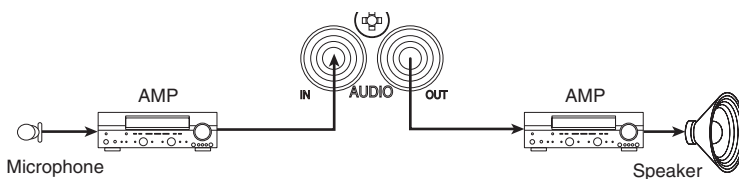


Video Input

- Use a coaxial cable.
- Set the video format on the format setting screen to match the inputted images.
- For details see the Instruction Manual (Application Instructions).

11-2. Connecting to analog audio Input/Output

First check that no power is being supplied to the equipment before connecting.



Audio input/output

- It sends the audio signals that are input to the network decoder.
- It outputs the audio signal received from the network decoder to the speaker.
- For details see the Instruction Manual (Application Instructions).

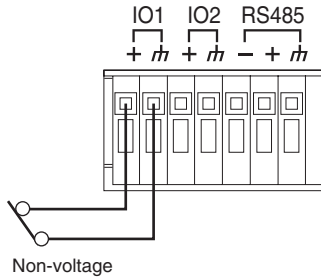
12. Installation *Connecting to I/O terminal*

IO1 and IO2 on the terminal block can be used as connection input terminals or connection output terminals.

It is possible to choose input/output for the terminal on the input/output setting screen. For details see the Instruction Manual (Application Manual).

Connect the terminals as shown in the figure. First check that no power is being supplied to the equipment before connecting.

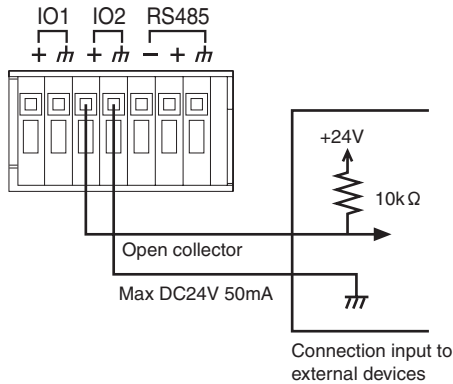
When using as input



■ Operation

- Input with a pulse width of at least 1500 ms.
- Operates with function that was set on input/output screen.
- For details see the Instruction Manual (Application Instructions).

When using as output

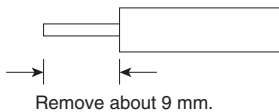


■ Operation

- Operates with function that was set on input/output screen.
- For details see the Instruction Manual (Application Instructions).

Cable

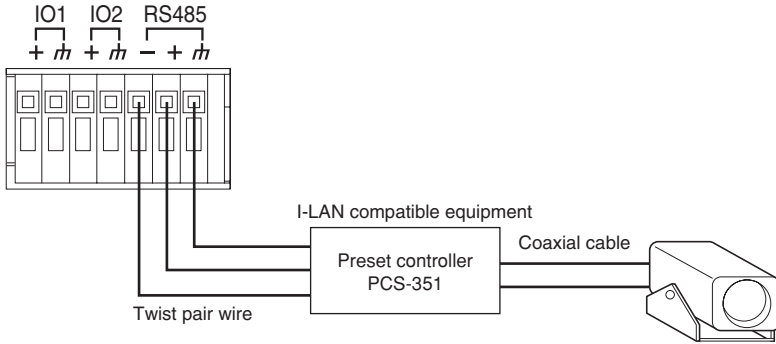
Remove about 9 mm from the end of the cable. The thickness of cables for connection should be AWG28-22.



13. Installation *Connecting to the RS485 or RS-232C*

13-1. Connecting to the RS-485

Connect the RS-485 of terminal block 1 as shown in the following figure. First check that no power is being supplied to the equipment before connecting.

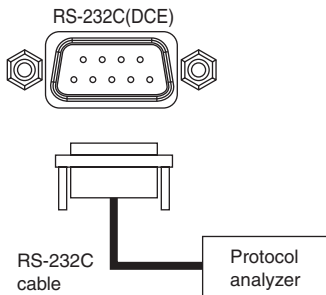


RS-485 control

- Operate a keyboard (PCS-35KB) etc. connected to the network decoder to operate an Ikegami I-LAN compatible device or camera platform connected to this equipment.
- The product can be customized to suit user-specified RS-485-compatible equipment. In this way, a client PC may be used to control the system. (You will be charged for customizing the product. Contact your dealer.)
- For details see the Instruction Manual (Application Instructions).

13-2. Connecting to the RS-232C

First check that no power is being supplied to the equipment before connecting.



RS-232C control

- The same commands as with RS-485 are outputted. A protocol analyzer added in between enables to monitor communications.
- The product can be customized to suit user-specified RS-232C-compatible equipment. In this way, a client PC may be used to control the system. (You will be charged for customizing the product. Contact your dealer.)
- For details see the Instruction Manual (Application Instructions).

14. Troubleshooting

Before asking for servicing, check the following points.

Problem	Check points	Ref. page
No power supplied	* Is the power cable plugged in tightly?	6, 11-12
	* Is the LAN cable tightly connected with the equipment in the case of PoE power supply?	6
Failure to interact with the PC	* Is the IP address as specified?	8-10, 15-17
	* Is the LAN cable tightly connected?	6
	* Is the hub power on?	6, 15-17
	* Is connection with the hub as specified?	15-17
LED E (red) is lit or is blinking	* Interrupt the power supply and contact your dealer.	15-17

* For troubles with connected, refer to “Troubleshooting” in the Application Instructions.

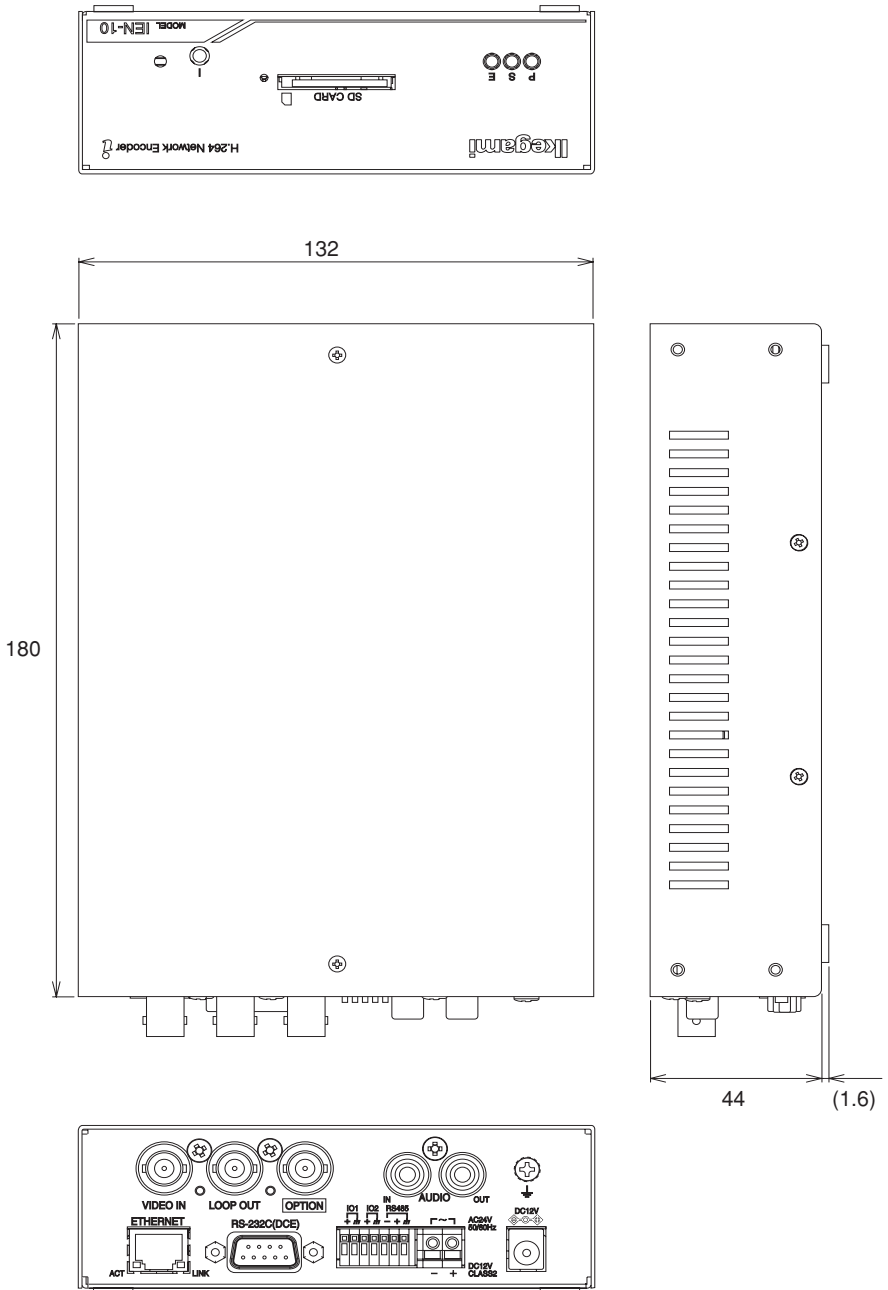
15. Specifications

- (1) Video input: VBS 1.0Vp-p/75Ω unbalanced
Incorporating the automatic termination loop through function
Compliant with RS-170A (color) or with RS-170 (B/W)
- (2) Image compression format: H.264 and JPEG
- (3) Image setting: Setting of 3 patterns possible
 - Compression format: H.264/JPEG
 - Compression mode: CBR/VBR
 - Image size: 720x480/640x480/320x240/160x120
 - Frame rate: 7 levels (30/15/10/5/3/2/1fps)
 - Bit rate (H.264 only): 64Kbps to 8Mbps
 - Image quality (JPEG only) 5 levels
- (4) Audio Monaural bidirectional (full duplex)
Line input : -10dBV/10kΩ unbalanced
Line output : -10dBV/600Ω unbalanced
- (5) Audio compression format: ADPCM 32Kbps
- (6) Privacy masking function: Possible to set in max. 8 locations
- (7) Motion-detection function Outdoor-responsive type
Mask setting possible
- (8) Image storage function Data can be stored in SD memory cards.
- (9) Protocol: IPv4 : TCP, UDP, RTP/RTCP, RTSP, HTTP, FTP, NTP
Multicast possible
IPv6 : TCP, UDP, RTP/RTCP, RTSP, HTTP, FTP
Multicast possible
- (10) Monitoring: Special viewer software or decoder
- (11) Network: Ethernet 10Base-T/100Base-TX
- (12) Serial: RS-232C DCE
RS-485
- (13) I/O terminal: Input: Non-voltage
Output: Open collector (MAX 24V 50mA)
- (14) Supply power: AC24V±10%,50/60Hz/
DC12V(10.5V to 15V)/
PoE (IEEE 802.3af) CLASS 0
- (15) Power consumption: Approx. 4W
- (16) Ambient operating temperature/humidity: -10 to +50°C, 30-90%RH (no condensation)
- (17) Outer dimensions: 132(W)x44(H)x180(D)mm
(projections and accessories not included)
- (18) Weight: Approx. 880g

- (19) Input/output connectors:
- Ethernet : RJ-45 (Auto-MDI/MDIX)
 - VIDEO IN : BNC (automatic termination)
 - LOOP OUT : BNC (loop through)
 - AUDIO IN : RCA
 - AUDIO OUT : RCA
 - AC24V/DC12V : 2P push-in terminal
(common for AC/DC)
 - DC12V : AC adapter jack
 - I/O terminal : 4P push-in terminal
(IN/OUT switching: 2)
 - RS-232C : 9P D-SUB (male)
 - RS-485 : 3P push-in terminal
 - SD memory card slot : Full size
- (20) Accessories:
- Instruction Manual (Setup Instructions)
 - Rubber foot

* Specifications and design are subject to change for product improvements without notice.

16. Appearance view



17. Warranty and after-sales service

Confirming contents of Guarantee, Storage

The Guarantee for this product is attached to this manual. Read the contents carefully and fill in the required items. Keep the Guarantee in a safe place.

- Please consult Ikegami Electronics (U.S.A.) Inc. or Ikegami Electronics (Europe) GmbH or your dealer for full warranty information. Your dealer will repair or replace free of charge within the warranty period according to the warranty coverage.
- For repairs after the expiration of the warranty period, consult your dealer or sales representative. It will first be judged whether the fault is repairable or not. Charged servicing will then be made upon request of the user.
- Before you ask for servicing, please ensure you read the Instruction Manual. If the unit still fails, take note of the model number, date of purchase, problem, etc. in detail, and inform your dealer or sales representative.
- If you have questions about the after-sale service, contact your dealer or sales representative.

**Holding period of performance parts requiring maintenance.
Ikegami holds performance parts requiring maintenance for 7 years
following production stop.**

*** Performance parts means parts required for maintaining the function of
the product.**

Ikegami

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