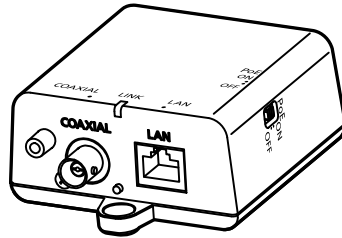


Operating Instructions

Coaxial - LAN Converter

Model No. WJ-PR204 / WJ-PR204E
RECEIVER (4-channel)
WJ-PR201 / WJ-PR201E
RECEIVER (1-channel)
WJ-PC200 / WJ-PC200E
CAMERA

WJ-PC200



WJ-PR204



Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

Important information

WARNING:

- To prevent injury, this apparatus must be securely attached to the floor/wall/ceiling in accordance with the installation instructions.
- To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.
- The apparatus should not be exposed to dripping or splashing and no objects filled with liquids, such as vases, should be placed on the apparatus.
- All work related to the installation of this product should be made by qualified service personnel or system installers.
- The installation shall be carried out in accordance with all applicable installation rules.
- The connections should comply with local electrical code.
- The mains plug or an appliance coupler shall remain readily operable.

CAUTION:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- The network camera is only intended for a connection to an ethernet or PoE network without routing to the outside plant.
- Before attempting to connect or operate this product, please read the label on the bottom.

For U.S. and Canada:

WJ-PR204 / WJ-PR201 / WJ-PC200

For Europe and other countries:

WJ-PR204E / WJ-PR201E / WJ-PC200E

For Canada

CAN ICES-3(A)/NMB-3(A)

For U.S.A.

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.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

For U.S.A.

The model number and serial number of this product may be found on the surface of the unit.

You should note the model number and serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

For Europe

We declare under our sole responsibility that the product to which this declaration relates is in conformity with the standards or other normative documents following the provisions of Directives 2006/95/EC and 2004/108/EC.

Wir erklären in alleiniger Verantwortung, daß das Produkt, auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt. Gemäß den Bestimmungen der Richtlinie 2006/95/EC und 2004/108/EC.

Nous déclarons sous notre propre responsabilité que le produit auquel se réfère la présente déclaration est conforme aux normes spécifiées ou à tout autre document normatif conformément aux dispositions des directives 2006/95/CE et 2004/108/CE.

Nosotros declaramos bajo nuestra única responsabilidad que el producto a que hace referencia esta declaración está conforme con las normas u otros documentos normativos siguiendo las estipulaciones de las directivas 2006/95/CE y 2004/108/CE.

Noi dichiariamo sotto nostra esclusiva responsabilità che il prodotto a cui si riferisce la presente dichiarazione risulta conforme ai seguenti standard o altri documenti normativi conformi alle disposizioni delle direttive 2006/95/CE e 2004/108/CE.

Wij verklaren als enige aansprakelijke, dat het product waarop deze verklaring betrekking heeft, voldoet aan de volgende normen of andere normatieve documenten, overeenkomstig de bepalingen van Richtlijnen 2006/95/EC en 2004/108/EC.

Vi erklærer os eneansvarlige for, at dette produkt, som denne deklaration omhandler, er i overensstemmelse med standarder eller andre normative dokumenter i følge bestemmelserne i direktivene 2006/95/EC og 2004/108/EC.

Vi deklarerar härmed vårt fulla ansvar för att den produkt till vilken denna deklaration hänvisar är i överensstämmelse med de standarder eller andra normativa dokument som framställs i direktiv nr 2006/95/EC och 2004/108/EC.

Ilmoitamme yksinomaisella vastuullamme, että tuote, jota tämä ilmoitus koskee, noudattaa seuraavia standardeja tai muita ohjeellisia asiakirjoja, jotka noudattavat direktiivien 2006/95/EC ja 2004/108/EC säädköksiä.

Vi erklærer oss alene ansvarlige for at produktet som denne erklæringen gjelder for, er i overensstemmelse med følgende normer eller andre normgivende dokumenter som følger bestemmelsene i direktivene 2006/95/EC og 2004/108/EC.

For use only with power supply, UP0651S-57PB

WJ-PR204E/WJ-PR201E



For U.K.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amp and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from our dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

How to replace the fuse

The location of the differs according to the type of AC mains plug (figures A and B).

Confirm the AC mains plug fitted and follow the instructions below. Illustrations may differ from actual AC mains plug.

Open the fuse cover with a screwdriver and replace the fuse and close or attach the fuse cover.

Figure A

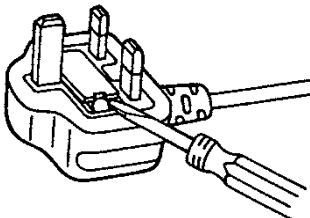
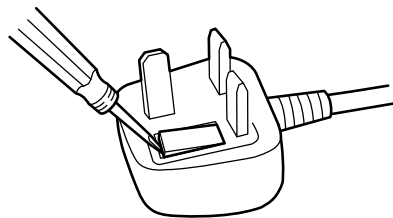


Figure B



Important safety instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by the manufacturer.
11. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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1 Preface

This product is a coaxial - LAN converter consisting of the receiver side unit and the camera side unit. It is capable of implementing long distance, high speed digital data transmission on existing coaxial cables with low setup costs. With the built-in PoE function, the unit is able to supply power to the network cameras, which eliminates the need for installing power outlets for the cameras.

About notations

The following notations are used when describing the functions limited for specified models.

The functions without the notations are supported by all models.

<Receiver side unit (4-channel)>

PR204: The functions with these notation are available when using the model WJ-PR204/WJ-PR204E.

<Receiver side unit (1-channel)>

PR201: The functions with these notation are available when using the model WJ-PR201/WJ-PR201E.

<Camera side unit>

PC200: The functions with these notation are available when using the model WJ-PC200/WJ-PC200E (with PoE incompatible cable included).

PC200: The functions with these notation are available when using the model WJ-PC200/WJ-PC200E (with PoE on/off switch).

Note

- The Coaxial - LAN Converter (RECEIVER) is called the receiver side unit and the LAN Converter (CAMERA) is called the camera side unit in this document.

RG-6/U coaxial cable

In this document coaxial cables with the following specifications are referred to as RG-6/U coaxial cables. **PR201**

Coaxial Cable Type	DC R/100 m (328 feet) of Inner Conductor	Maximum Cable Length (for PoE connections)	Maximum Cable Length (for non-PoE connections)
RG-6/U	Less than 4 Ω	500 m (1,640 feet)	2.0 km (6,560 feet)

1.1 Main Features

To the receiver side, a 4-channel model has been newly added in addition to the 1-channel model. (PR204)

Up to 4 network cameras can be connected and used on a single receiver side unit¹. Now we have a true space-saving system.

Power over Ethernet Plus (PoE+) ready

The coaxial - LAN converter is compliant with PoE+ standards (IEEE802.3at) and PoE+ cameras can be connected and used¹.

Use over long distances (PR201)

The coaxial - LAN converter can be used for distances of up to 300 m (984 feet) for connections for recommended PoE+ cameras and 500 m (1,640 feet) for connections for recommended PoE cameras and 2.0 km (6,560 feet) for connections for cameras using an external power supply¹. (When used with RG-6/U coaxial cable, and the loop resistance is below 4 Ω/100 m {328 feet} without additional joint parts.)

High-speed transmission

The coaxial - LAN converter is capable of transmission speeds of 35 Mbps or over for TCP², and 45 Mbps or over for UDP connections.² (When used with RG-6/U coaxial cable, and for distances under 2.0 km (6,560 feet) (PR201), 500 m (1,640 feet) (PR204)).

No setup required

Connections can be established by simply connecting the coaxial cable to the coaxial - LAN converter.

¹ There are limitations on the combinations of the cameras to be connected, the type of power supply and transmission range to the receiver side units. Please see page 31 for details. For information on recommended network cameras, see our support site (https://i-pro.com/global/en/surveillance/training_support/support/technical_information).

² Transmission speed is the speed of transmission between the receiver side unit and the camera side unit. Values may vary depending on the condition of the coaxial cable (for example, as the cable deteriorates over time), network conditions, etc.

1.2 Introduction

About the user manuals

- Instruction Manual (this document): Explains the safety precautions, instructions for use and installation, installation and setup procedures, and other information. The external appearance and other parts shown in this manual may differ from the actual product within the scope that will not interfere with normal use due to improvement of the product.

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1. ANY LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
2. ANY INCONVENIENCE, LOSS, OR DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
3. ALL MALFUNCTIONS OR TROUBLES FROM UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER, REGARDLESS OF THE CAUSE OF THE MALFUNCTION OR TROUBLE;
4. INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
5. ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
6. ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING A PHOTOGENIC SUBJECT, DUE TO VIOLATION OF PRIVACY WITH THE RESULT OF THAT SURVEILLANCE-CAMERA'S PICTURE, INCLUDING SAVED DATA, FOR SOME REASON, BECOMES PUBLIC OR IS USED FOR ANY PURPOSE;
7. LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

Network security

As you will use this unit connected to a network, your attention is called to the following security risks.

- ① Leakage or theft of information through this unit
- ② Use of this unit for illegal operations by persons with malicious intent
- ③ Interference with or stoppage of this unit by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- After the unit is accessed by the administrator, make sure to close the browser.
- Do not install this unit in locations where this unit or the cables can be destroyed or damaged by persons with malicious intent.

Security between the receiver side unit and camera side unit

- Data sent and received between camera side unit and receiver side unit employs AES 128-bit encryption, however we cannot guarantee that data will not be intercepted by a third party.
- The unit does not have a firewall feature. To prevent unauthorized external access to the network, we recommend performing the following procedures.
 - Setup security measures for the router and computers accessing the network.

1.4 Included Items

Confirm that the following items are included in the unit's packaging.

WJ-PR204/WJ-PR204E/WJ-PR201/WJ-PR201E

- Operating Instructions (this document) (1 pc.)
- AC adapter (1 pc.)
- AC Cord (1 pc.) WJ-PR204, WJ-PR201
- AC Cord (2 pcs.)¹ WJ-PR204E, WJ-PR201E
- BNC Connector Cover (4 ch.) (1 pc.) **PR204**
- BNC Connector Cover cap (3 pcs.)² **PR204**
- BNC Connector Cover (1 ch.) (1 pc.) **PR201**
- Screw (M2.6 × 10 mm {3/8 inches}) (2 pcs. of them, 1 for spare)

WJ-PC200/WJ-PC200E

- Operating Instructions (this document) (1 pc.)
- BNC Connector Cover (1 ch.) (1 pc.)
- Wood screw (4 × 20 mm {13/16 inches}) (3 pcs. of them, 1 for spare)
- Screw (M2.6 × 10 mm {3/8 inches}) (2 pcs. of them, 1 for spare)
- PoE incompatible cable (1 pc.) **PC200**
- Cable coupler (used with the network cable) (1 pc.) **PC200**

¹ UK and other types of AC cords are included.

² BNC Connector Cover cap will be shipped with attached to the BNC connector cover (4 ch.).

1.5 For Your Safety

To prevent severe injury and loss of life/property, read this section carefully before using the unit to ensure proper and safe operation of your unit.

1.5.1 WARNING

Consult an authorized dealer for mounting.

- Experience and knowledge are required to perform mounting of the unit. Incorrect mounting can cause damage to the unit, fire, electric shock, or injury. Make sure to consult an authorized dealer for mounting.

Stop the operation immediately when something is wrong with this product.

- When smoke goes up from the product, the smell of smoke comes from the product, or the exterior of the product has deteriorated, continued use will cause a fire or fall of the product resulting in injury, or damage to the product. In this case, turn the power off immediately and contact qualified service personnel for service.

Select an installation area that can support the total weight.

- Selecting an inappropriate installation surface may cause this product to fall down or topple over, resulting in injury or accidents. Installation work shall be started after sufficient reinforcement.

Do not install this product in locations subject to vibration.

- Loosening of mounting screws or bolts may cause a fall of the product resulting in injury or accidents.

Turn the power off when do wiring of this product.

- Failure to observe this may cause electric shock. In addition, short circuit or wrong wiring may cause fire.

Correctly perform all wiring.

- Short circuits in the wiring or incorrect wiring may cause fire or electrical shock.

Completely insert the power plug into the power outlet. PR204

PR201

- Failure to do so may cause electric shock and/or excessive heat resulting in a fire. Do not use damaged power plugs or power outlets.

Regularly remove any dust, etc. from the power plug. PR204

PR201

- Accumulated dust may cause an insulation defect from moisture, etc., resulting in a fire. Disconnect the power plug, then wiping with a dry cloth.

Always hold the plug when unplugging the power cord. (PR204)

(PR201)

- Otherwise, the cord may be damaged and result in a fire or electric shock.

The exclusively designed mount bracket shall be used. (PR204)

(PR201)

- Failure to observe this may cause a drop resulting in injury or accidents. Use the exclusively designed mount bracket for installation.

The screws and bolts must be tightened to the specified torque.

- Failure to observe this may cause a drop resulting in injury or accidents.

Periodic inspections shall be conducted.

- Rust on the metal parts or screws may cause a fall of the product resulting in injury or accidents. Consult the dealer for the inspections.

Turn the power off when cleaning this product.

- Failure to observe this may cause injury.

Do not attempt to disassemble or modify this product.

- Failure to observe this may cause fire or electric shock. Consult the dealer for the repair or inspections.

Do not insert any foreign objects.

- Fire or electrical shock may be caused if water or any foreign objects, such as metal objects, enter inside the unit. Turn the power off immediately and contact qualified service personnel for service.

Only use the included AC adapter. (PR204) (PR201)

- If other AC adapters are used, the voltage and positive/negative polarities may differ and this may cause smoke to be emitted or fire.

Do not strike or give a strong shock to this product.

- Failure to observe this may cause fire or injury.

Place the unit securely on a stable, level surface.

- Serious damage and/or injury may result if the unit falls.

Do not install the unit in a dusty or moist place.

- This may result in electric shock or fire.

Do not use this product in an inflammable atmosphere.

- Failure to observe this may cause an explosion resulting in injury.

Avoid installing this product in the locations where salt damage occurs or corrosive gas is produced.

- Otherwise, the mounting portions will deteriorate and accidents such as a fall of the product may occur.

Do not damage the power cable. (PR204) (PR201)

- Do not damage, fabricate, twist, stretch, bundle, or forcibly bend the power cable. Do not place heavy objects on it, and keep it away from heat sources. Use of a damaged power cable may cause electric shock, short circuit, or fire. Consult the dealer for repair.

Do not bring metal objects near the power outlet slots. (PR204)

(PR201)

- This may result in electric shock or fire.

Do not use the included AC cord with other devices. (PR204)

(PR201)

- This may result in electric shock or fire.

Only use the included AC cord. (PR204) (PR201)

- Using other AC cords may result in electric shock or fire.

Do not damage coaxial cables, insert objects into the conductor, or connect coaxial cables with incomplete relays.

- If water or other objects enter the conductor, or coaxial cables with incomplete relays are connected, it may result in electric shock or fire. Disconnect the power line and contact an authorized service center if there is any damage to the coaxial cables.

Do not forcibly pull on the cable.

- Doing so may result in a fire or electric shock.

Keep the BNC connector cover cap (an accessory that attaches to the BNC connector cover) out of reach of young children to prevent them from swallowing it by accident.

- Otherwise, they may swallow the cap by mistake. In this case, consult a doctor immediately.

Do not damage existing wires or pipes when making holes for mounting or wiring.

- This may result in earth leakage, electric shock, or fire.

Do not use the unit close to electronic devices such as medical equipment.

- Otherwise, radio waves from the unit may affect electronic devices and cause of an accident due to a malfunction.

Never touch the power plug with wet hands. (PR204) (PR201)

- This may result in electric shock.

Do not pour or wet the unit.

- This may result electric shock or fire. Turn the power off immediately and contact qualified service personnel for service.

Do not touch the unit, ethernet cable, coaxial cable, AC cord, or power plug during thunderstorms.

- This may result in electric shock.

Do not touch the core of the coaxial cable.

- This may result in electric shock. A maximum of DC 60 V is applied to the coaxial cable.

1.5.2 CAUTION

If you do not use the unit for a long period of time, unplug the power cable from the receptacle. (PR204) (PR201)

- Otherwise, it may result in a fire or electric shock.

Do not touch any metal edges with your hands.

- Doing so may cause injury.

Do not connect other devices to the BNC connector of the unit.

- This may damage the unit.

1.6 General Precautions

Follow the instructions written in Important safety instructions (see page 4) and 1.5 For Your Safety (see page 12) together with the instructions written below.

- 1. Follow the following precautions in order to maintain product performance over long periods of time.**
 - Do not use the unit in areas with high temperatures or humidity for long periods of time. Use in these areas can degrade parts which can shorten the life-span of the unit.
 - Improve heat dissipation in the installation location and do not expose the unit to direct heat from heating appliances.
- 2. The unit is intended for indoor use only and should not be mounted outdoors.**
- 3. Exercise care not to let the unit get wet.**
 - Use the unit where it will not be subjected to water droplets or splashes.
- 4. The unit does not have a power switch.** (PR204) (PR201)
 - To disconnect this unit from the power supply, unplug the AC adapter power cable or turn off the PoE power supply device. If installation requirements do not

allow the power to be quickly turned off, use a distribution panel with a circuit breaker capable of disconnecting the power, or connect this unit to a power source controller.

5. Handle this product with care.

- Do not drop this product, nor apply shock or vibration to the product. Failure to observe this may cause trouble.

6. Power cable  

- The attached AC adapter is designed exclusively for this unit. Do not use it for other devices. In addition, do not use other AC adapters for this unit.

7. Cleaning this product body

- Be sure to turn off the power before cleaning. Failure to observe this may cause injury.
Do not use benzine, thinner, alcohol, or any other types of solvents or detergents. Otherwise, it may cause discoloration. When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

8. Cleaning stains from the unit


- Wipe stained areas with a damp soft cloth.


9. Radio disturbance

- This unit uses the same high-frequency signals as those used for amateur radio, shortwave broadcasting, aviation radio, marine radio, and radio waves used for astronomical observations and other similar purposes. If the unit is used near radio equipment, it may interfere with these activities.

10. Equipment classification and power source indication label

- Refer to the indication label on the bottom side of this unit for the equipment classification, power source, and other information.

: Direct current symbol

: Alternating current symbol

1.7 Precautions for Installation

Install the unit in accordance with electrical equipment technical standards.

Before beginning to install and connect the unit, check and prepare all necessary peripheral equipment and cables. Turn off the power supply of the unit, camera, and other components before connecting them.

**All electrical wiring should be performed by a qualified electrician.
Consult an authorized dealer for installation.**

Power supply

This product has no power switch. When turning off the power, disconnect the power supply from the AC adapter (accessory) and the PoE device. Install the unit so that the AC cord or LAN cable can be easily disconnected.

1. The unit is intended for indoor use only

- The unit cannot be used outdoors. Do not install the unit in areas that are exposed to direct sunlight for long periods of time, or areas near heaters or air conditioners. Installing the unit in such areas may cause malfunctions and cause the unit to change shape or color. Do not use the unit when they have been exposed to water or moisture.

2. Do not install or use the unit near medical equipment

- High-frequency signals emitted from the unit may affect the operation of medical equipment and cause malfunctions.

3. Do not install or use the unit in the following locations:

- Locations where it may get wet from rain or water splash (including under the eaves, etc.)
- Locations where a chemical agent is used such as a swimming pool
- Locations subject to moisture or oil smoke such as a kitchen
- Locations that have a specific environment that is subject to an inflammable atmosphere or solvents
- Locations where a radiation, an X-ray, a strong radio wave or a strong magnetic field is generated
- Locations with volcanic activity or hot springs where corrosive gas is produced, locations where it may be damaged by briny air such as seashores
- Locations where the temperature is not within the specified range (see page 57)
- Locations subject to vibrations, such as on vehicles, marine vessels, or above product lines (This product is not designed for on-vehicle use.)
- Locations subject to moisture or dust
- Locations subject to condensation as the result of severe changes in temperature

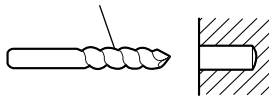
4. Precautions before receiver installations **PR204** **PR201**

- When mounting 3 to 4 connected receiver side units to the rack, use the following bracket (locally procured).
 - Rack mount bracket:
For WJ-PR204/WJ-PR201: BY-HCA10A
For WJ-PR204E/WJ-PR201E: BY-HCA10CE
- Available racks
 - EIA standard rack or equivalent (third party)
EIA19 type
- Rack mounting screws
 - M5 × 12 mm {15/32 inches} screws

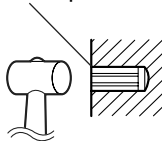
5. Precautions before camera installations **PC200** **PC200**

- Use the screws with the specifications shown on page 26 when mounting the camera side unit to a ceiling or wall. Screws are included with camera side unit. Use screws that are appropriate for the material of the ceiling or wall.
- When mounting the camera side unit to a ceiling or wall (see page 26), do not drive the screws into a soft material. Drive the screws into a secure, 25 mm (1 inch) thick area of the ceiling or wall, such as a crossbeam, otherwise the camera side unit may fall. If there is no crossbeam, place a board on the other side of the ceiling or wall to make sure the camera side unit is securely mounted.
- When mounting a camera side unit on a concrete or mortar ceiling or wall, use a drill and anchors (locally procured, body diameter 4 mm {3/16 inches}) and make holes using the following procedure.
 - i. Mark points where you are going to make holes (2 places) according to the position of the camera side unit.
 - ii. Make holes in the areas that you marked with an electric drill.
 - Mortar ceilings break easily when drilling. Be careful of pieces of mortar which may become loose and fall.
 - iii. Insert the anchors (locally procured) into the holes and push them inside with a hammer.

Drill for concrete (in case of tile, use a drill for tile)



Caulk to waterproof



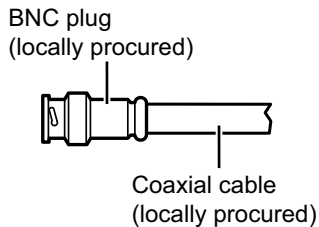
- Mount the camera side unit to a secure area and make sure that the anchors and screws are secured.

6. Screw tightening

- The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.
- Do not use an impact driver. Use of an impact driver may damage the screws or cause tightening excessively.
- When a screw is tightened, make the screw at a right angle to the surface. After tightening the screws or bolts, perform checks to ensure that the tightening is sufficient enough so that there is no movement or looseness.

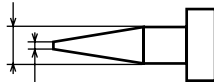
7. Coaxial cable connections

- Disconnect the coaxial cable from all devices and measure the insulation resistance of the coaxial cable (new or existing) before making connections. Insulation resistance value: 1 M Ω or more for DC 500 V
- Confirm the length of the coaxial cable (see page 31, page 33).
- We recommend RG-6/U coaxial cable.
- The performance of the coaxial cable may be affected if it is relayed.
- Use only the following recommended BNC plug when connecting coaxial cables to the BNC connectors of the unit.
 - Applicable plug: MIL-C39012C, MIL-C39012/16F, or BS CECC2212: 1981 (Suffixes attached to the standards may be updated.)



- Tip dimensions inside the recommended BNC plug

Diameter: 1.32 mm (0.052 inches) to
1.37 mm (0.054 inches)



Diameter: 0.13 mm (0.005 inches) to
0.69 mm (0.027 inches)

IMPORTANT

- Use a suitable plug. Using a non-specified plug may cause a bad connection or cause damage to the BNC connector.

8. Mounting and connections

- Do not mount camera side units above or below other camera side units. This can cause transmission interference. When mounting several camera side units in the same area, mount them side by side each other.
- When connecting the coaxial cable to the unit, make sure that no other devices are connected to the coaxial cable. Connecting the coaxial cable to the unit when there are other devices connected (such as an analog CCTV camera), may cause damage to the connected device.
- When another device such as lightning arresters is connected to the coaxial cable, it may give impact to transmission quality. Do not connect other devices to the coaxial cable.
- When mounting extra cameras or removing cameras, make sure to turn off the power from the receiver side before starting work and the turn on the power once the work has been completed.
- When the receiver side is connected to a PoE hub as well as an AC adaptor, the power will not be turned off even if you disconnect the AC adaptor. In this case, make sure to disconnect the Ethernet cable to turn off the power.

9. Sulfurization caused by rubber products

Do not store or install any rubber products (such as gaskets or rubber feet) that contain sulfur near or in the same container as this product. Sulfuric compounds in the rubber product may cause sulfuric corrosion of this product's electrical components or terminals, leading to malfunction.

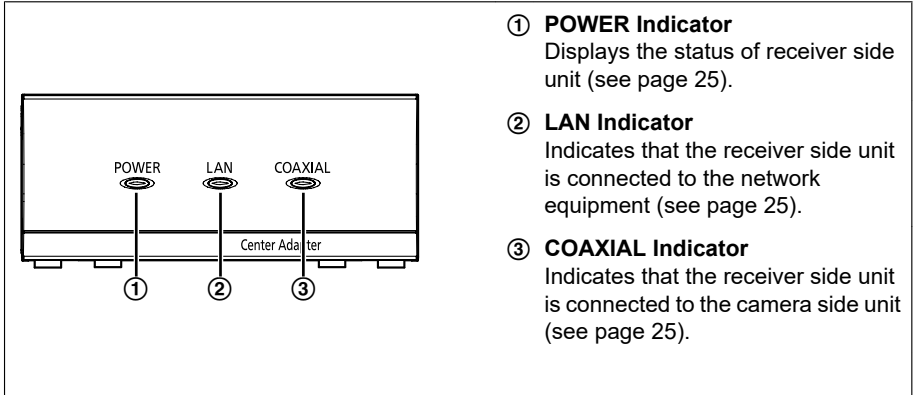
10. Shielded (STP) LAN cables must be used with this unit to ensure compliance with CE standards. (WJ-PR204E/WJ-PR201E/WJ-PC200E)

11. Make sure to remove this product if it will no longer be used.

2 Parts and functions

2.1 WJ-PR204/WJ-PR204E/WJ-PR201/WJ-PR201E (connects to the network device)

Front view

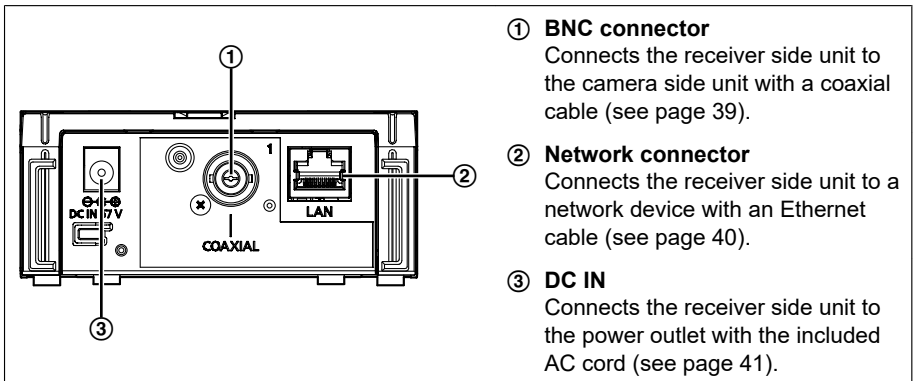


Note

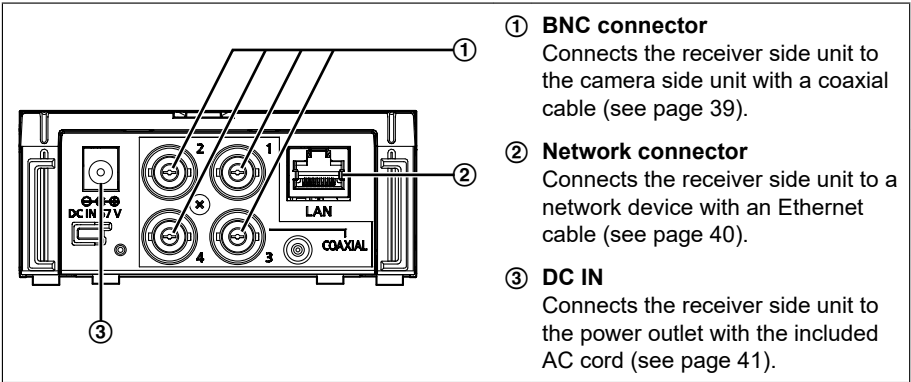
The WJ-PR204 is used as an example in some of the illustrations in this document.

Rear view

WJ-PR201, WJ-PR201E



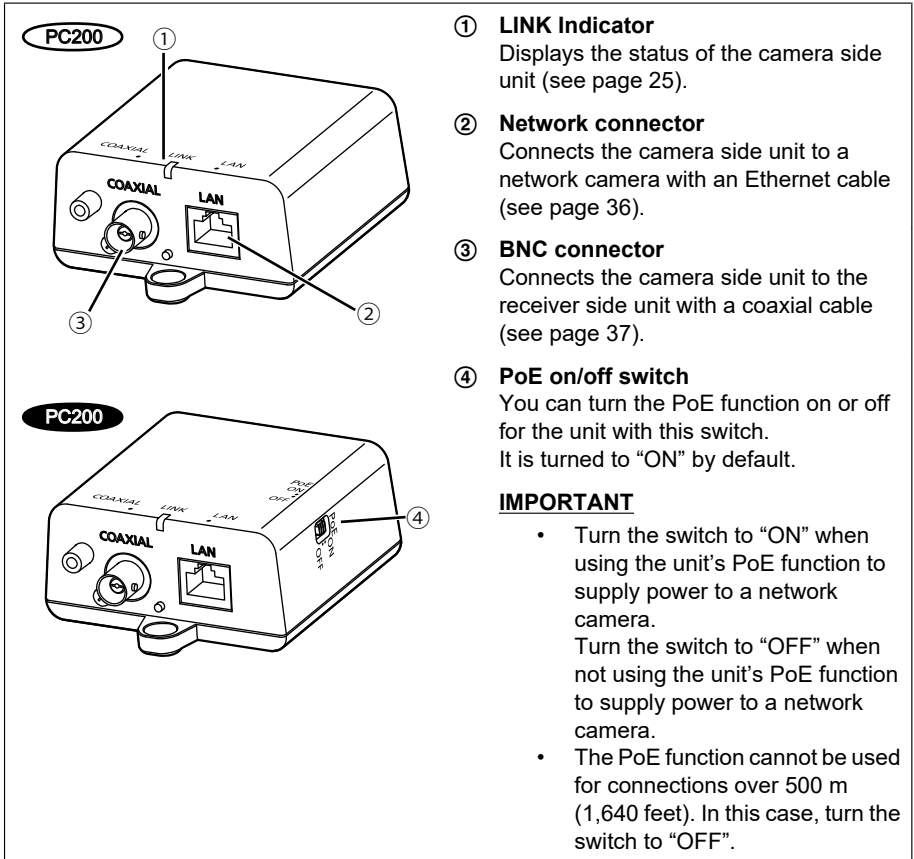
WJ-PR204, WJ-PR204E



- ① **BNC connector**
Connects the receiver side unit to the camera side unit with a coaxial cable (see page 39).
- ② **Network connector**
Connects the receiver side unit to a network device with an Ethernet cable (see page 40).
- ③ **DC IN**
Connects the receiver side unit to the power outlet with the included AC cord (see page 41).

2.2 WJ-PC200/WJ-PC200E (connects to the camera)

Front view



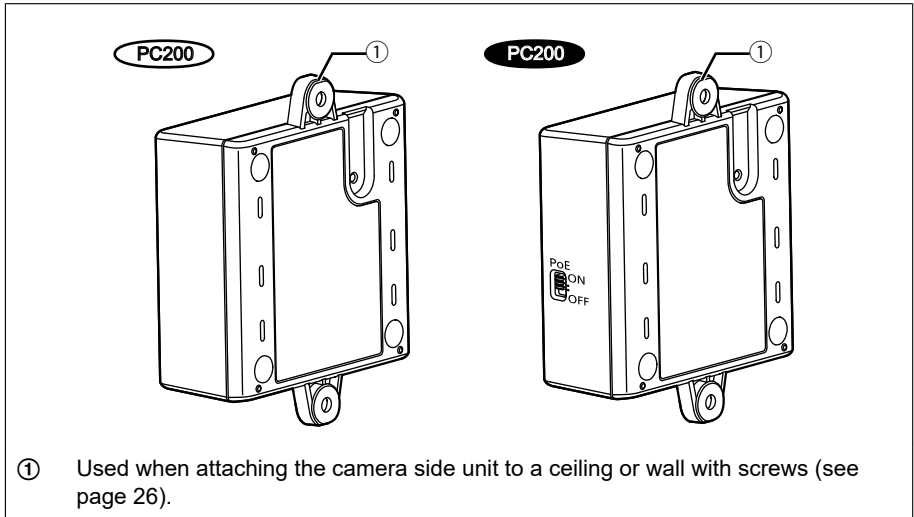
- ① **LINK Indicator**
Displays the status of the camera side unit (see page 25).
- ② **Network connector**
Connects the camera side unit to a network camera with an Ethernet cable (see page 36).
- ③ **BNC connector**
Connects the camera side unit to the receiver side unit with a coaxial cable (see page 37).
- ④ **PoE on/off switch**
You can turn the PoE function on or off for the unit with this switch. It is turned to "ON" by default.

IMPORTANT

- Turn the switch to "ON" when using the unit's PoE function to supply power to a network camera.
Turn the switch to "OFF" when not using the unit's PoE function to supply power to a network camera.
- The PoE function cannot be used for connections over 500 m (1,640 feet). In this case, turn the switch to "OFF".

2 Parts and functions

Rear view



2.3 Understanding the Indicators

The light indicators change depending on the operating status of the camera and receiver side units.

Receiver side unit

Indicator	Light Status	Meaning
POWER	Green (lit)	The receiver side unit is active.
	Off	The power source is not supplied to the receiver side unit.
LAN	Green (lit)	A network device is connected.
	Green (flashing)	Sending/receiving data from a network device.
	Orange (lit)	A network device is not connected, or the connected network device is not operated.
	Off	The power source is not supplied to the receiver side unit.
COAXIAL	Green (lit)	The camera side unit is connected to the receiver side unit through the coaxial cable. * When using the WJ-PR204, the indicator lights even if only 1 camera is connected to the camera side unit when a coaxial cable is connected.
	Red (lit)	The receiver side unit is malfunctioning. Contact an authorized service center.
	Off	The receiver side unit is not receiving power, or the coaxial cable or camera side unit is not connected.

Camera side unit

Indicator	Light Status	Meaning
LINK	Green (lit)	The camera side unit is connected to the receiver side unit.
	Red (lit)	The camera side unit is malfunctioning. Contact an authorized service center.
	Off	The receiver side unit is not operated, or the coaxial cable is not connected.

3 Mounting the Unit

3.1 Mounting the camera side unit

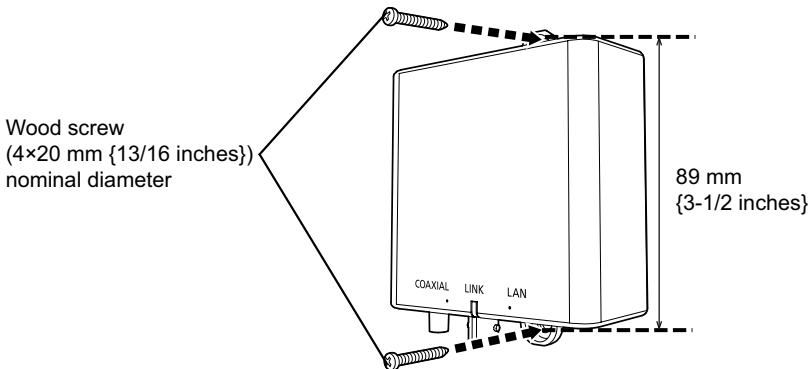
Please read the following information before mounting the camera side unit.

IMPORTANT

- Mount the camera side unit to a secure location that is firm enough to support its weight (approximately 110 g (0.24 lb)) and the weight of the cabling.
 - Mount the camera side unit to secure part of the ceiling or wall such as a crossbeam.
 - Do not mount camera side units above or below other camera side units. This can cause transmission interference. When mounting several camera side units in the same area, mount them side by side each other.
 - The pull-out strength of the installation area must be at least 294 N (66.1 lbf) per screw.
1. Mount the camera side unit on a durable part of a ceiling or wall using wood screws (4×20 mm {13/16 inches} nominal diameter) (accessory).
 - Use the included wood screws to mount the unit onto a wooden ceiling or wall only. If the ceiling or wall is not wooden, use screws (locally procured) appropriate for the ceiling or wall materials.

Note

Excluding some explanations, the **PC200** camera side unit with PoE incompatible cable is used in the subsequent illustrations.



3.2 Mounting the receiver side unit to a Rack

By using the Rack Mount Connecting Fitting (locally procured), 3 or 4 connected receiver side units can be mounted to a rack.

Prepare the Rack Mount Connecting Fitting (BY-HCA10A), which includes the following items.

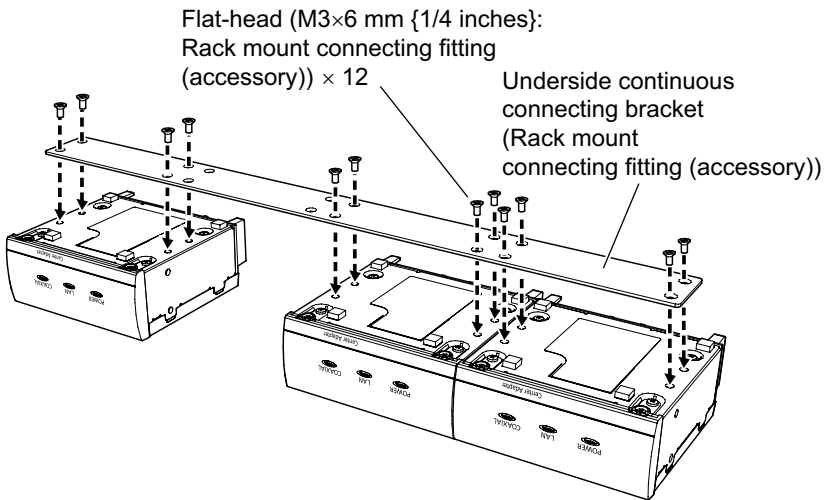
- Mounting bracket (2 pcs.)
- Underside continuous connecting bracket (2 pcs.)
- Screw (Flat-head M3×6 mm {1/4 inches}: 32 pcs.)
- Screw (M3×6 mm {1/4 inches}: 6 pcs.)

IMPORTANT

- Make sure to use the screws included with the BY-HCA10A.
- The part number differs depending on where the rack mount connecting fitting was purchased.
 - For U.S. and Canada: BY-HCA10A
 - For Europe and other countries: BY-HCA10CE

Mounting 2 to 4 receiver side units to a rack

1. Connect the receiver side units together using the BY-HCA10A underside continuous connecting bracket with the screws included with the BY-HCA10A.
 - **Connecting 3 receiver side units**
Place a receiver side unit on both ends of the underside continuous connecting brackets.
(Recommended torque 0.7±0.3 N·m {0.52±0.22 lbf·ft})



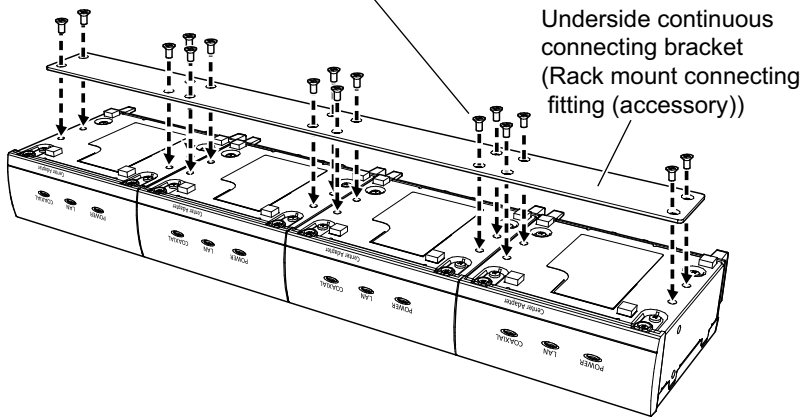
3 Mounting the Unit

Note

- When mounting the receiver side units, make sure to connect a unit to both the left and right ends of the underside continuous connecting bracket.
- The BY-HCA10A rack mount bracket comes with 2 underside continuous connecting bracket and 32 screws (flat-head: M3×6 mm {1/4 inches}). When connecting 3 units together, use 1 underside continuous connecting bracket and 12 screws (flat-head: M3×6 mm {1/4 inches}). Keep the remaining parts.
- **Connecting 4 receiver side units**
(Recommended torque 0.7±0.3 N·m {0.52±0.22 lbf·ft})

Flat-head (M3×6 mm {1/4 inches}):

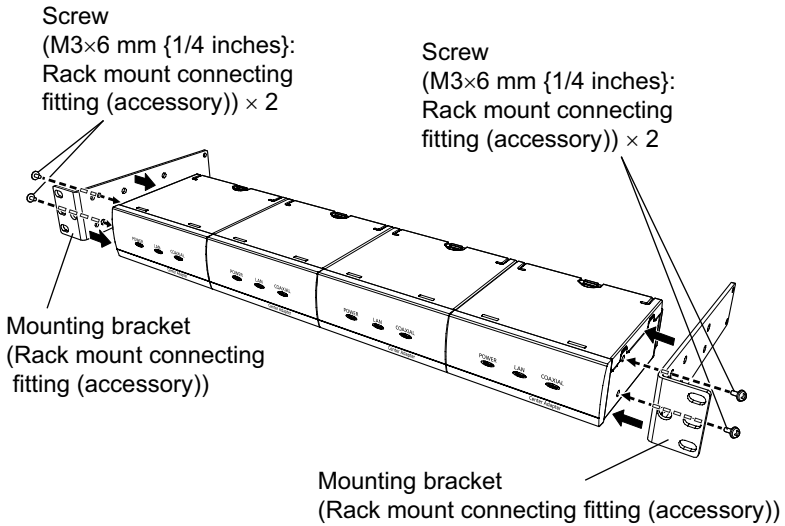
Rack mount connecting fitting (accessory) × 16



Note

The BY-HCA10A rack mount bracket comes with 2 underside continuous connecting bracket and 32 screws (flat-head: M3×6 mm {1/4 inches}). When connecting 4 units together, use 1 underside continuous connecting bracket and 16 screws (flat-head: M3×6 mm {1/4 inches}). Keep the remaining parts.

2. Secure the mounting brackets of the BY-HCA10A to both sides of the connected receiver side units with the screws included with the BY-HCA10A.
(Recommended torque $0.7 \pm 0.3 \text{ N}\cdot\text{m}$ { $0.52 \pm 0.22 \text{ lbf}\cdot\text{ft}$ })

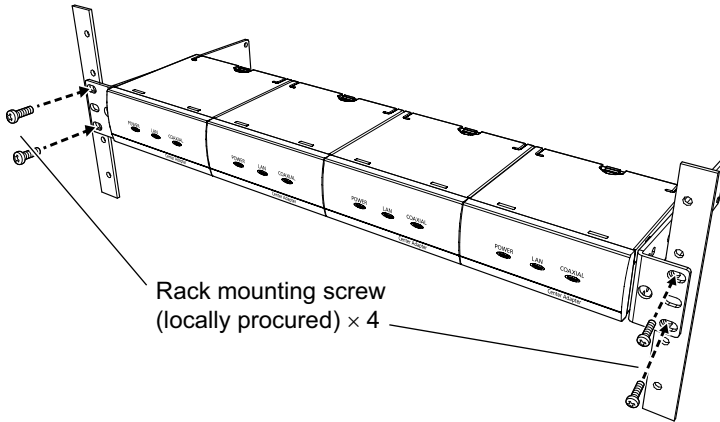


Note

- The BY-HCA10A rack mount bracket comes with 6 screws (M3×6 mm {1/4 inches}). Use 4 screws (M3×6 mm {1/4 inches}) when mounting to sides of the connected receiver side units. Keep the remaining parts.

3 Mounting the Unit

3. Secure the connected receiver side units to the separately-sold racks.
 - Securely mount the receiver side units to the rack with the rack mounting screws (locally procured, nominal diameter 5 mm {3/16 inches} tapping).



- When mounting to a rack, we recommend that you attach a cooling fan or other device to keep the units cool.

IMPORTANT

- Take measures to ensure that the temperature in the rack does not exceed 50 °C (122 °F).
- When mounting receiver side units to the rack, leave 1U (44 mm {1 23/32 inches}) or more clearance above and below the receiver side units.

4 Connecting the Unit

4.1 Connection Conditions

Maximum cable length varies depending on the power source used for the receiver side unit and the camera. Refer to the following information when connecting a camera to the coaxial - LAN converter.

4.1.1 When using a 1-channel Receiver Side Unit

IMPORTANT

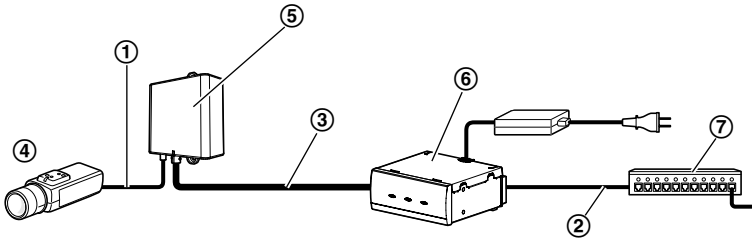
- Use RG-6/U coaxial cable with a loop resistance of $4 \Omega/100 \text{ m}$ {328 feet} or less. If a thin coaxial cable is used, the actual connections lengths will be shorter than the connection lengths listed in this manual.
- When the receiver side unit is powered by PoE, use a PoE camera that consumes no more than 6.5 W. A PoE+ camera cannot be connected.

Receiver side unit power source	Camera power source	Camera side unit Ethernet cable length ①	Receiver side unit Ethernet cable length ②	Compatible coaxial cable length ③
AC adaptor	PoE+	Max. 50 m {164 feet}	Max. 100 m {328 feet}	Max. 200 m {656 feet}: PoE+ camera Max. 300 m {984 feet}: Recommended cameras ¹
	PoE	Max. 100 m {328 feet}	Max. 100 m {328 feet}	Max. 300 m {984 feet}: PoE camera Max. 500 m {1,640 feet}: Recommended cameras ¹
	External power supply	Max. 100 m {328 feet} ³	Max. 100 m {328 feet}	Max. 2.0 km {6,560 feet}
PoE	PoE+	Cannot be connected	Cannot be connected	Cannot be connected
	PoE ²	Max. 100 m {328 feet}	Max. 5 m {16 feet 4 inches}	Max. 300 m {984 feet}: PoE camera Max. 500 m {1,640 feet}: Recommended cameras ¹
	External power supply	Max. 100 m {328 feet} ³	Max. 5 m {16 feet 4 inches}	Max. 2.0 km {6,560 feet}

4 Connecting the Unit

1-channel Receiver Side Unit connection example

When the camera is powered by PoE and the receiver side unit is powered by an AC adaptor:



- ① Ethernet cable (Cat-5e or higher, straight)
- ② Ethernet cable (Cat-5e or higher, straight)
- ③ Coaxial cable
- ④ Camera
- ⑤ Camera side unit
- ⑥ Receiver side unit
- ⑦ Switching hub

*1 For information about recommended network cameras, visit our web site.

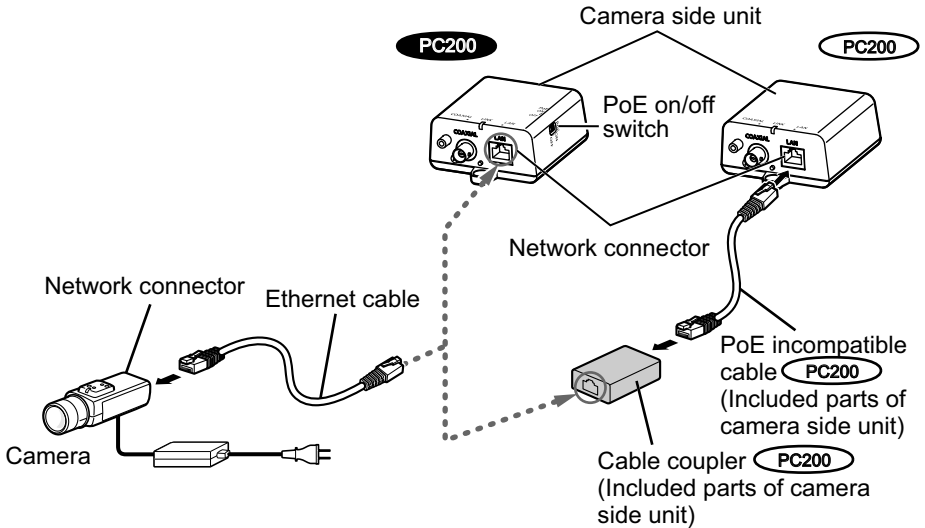
https://i-pro.com/global/en/surveillance/training_support/support/technical_information

*2 Use a PoE camera that consumes no more than 6.5 W.

*3 When connecting a PoE camera or PoE+ camera to an external power supply, make sure to use the included PoE incompatible cable. When the camera side unit can be installed near the camera, connect the PoE incompatible cable directly to the camera. When the camera side unit is installed far from the camera, use the included cable coupler (page 33). When a PoE incompatible cable is used, power is not supplied from camera side unit to the camera. **PC200**

Make sure to turn the PoE switch to "OFF" if the PoE camera or PoE+ camera is connected to an external power supply. **PC200**

Connection example when using the cable coupler



4.1.2 When using a 4-channel Receiver Side Unit

IMPORTANT

- Use RG-6/U coaxial cable with a loop resistance of $4 \Omega/100 \text{ m}$ {328 feet} or less. If a thin coaxial cable is used, the actual connections lengths will be shorter than the connection lengths listed in this manual.
- When a PoE camera is connected to a 4-channel receiver side unit, make sure the total power consumption is no more than 40 W.
- Only 1 PoE+ camera can be connected.
- When a 4-channel receiver side unit is powered by PoE, use an external power supply to supply power to the camera and use the PoE incompatible cable when using the **PC200**, or turn the PoE switch to "OFF" when using the **PC200**.

4 Connecting the Unit

Receiver side unit power source	Camera power source	Camera side unit Ethernet cable length ①	Receiver side unit Ethernet cable length ②	Compatible coaxial cable length ③
AC adaptor	PoE+	Max. 50 m {164 feet}	Max. 100 m {328 feet}	Max. 200 m {656 feet}: PoE+ camera Max. 300 m {984 feet}: Recommended cameras ^{*1}
	PoE	Max. 100 m {328 feet}	Max. 100 m {328 feet}	Max. 300 m {984 feet}: PoE camera Max. 500 m {1,640 feet}: Recommended cameras ^{*1}
	External power supply	Max. 100 m {328 feet} ^{*3}	Max. 100 m {328 feet}	Max. 500 m {1,640 feet}
PoE	PoE+	Cannot be connected	Cannot be connected	Cannot be connected
	PoE ^{*2}	Cannot be connected	Cannot be connected	Cannot be connected
	External power supply	Max. 100 m {328 feet} ^{*3}	Max. 5 m {16 feet 4-27/32 inches}	Max. 500 m {1,640 feet}

^{*1} For information about recommended network cameras, visit our web site.

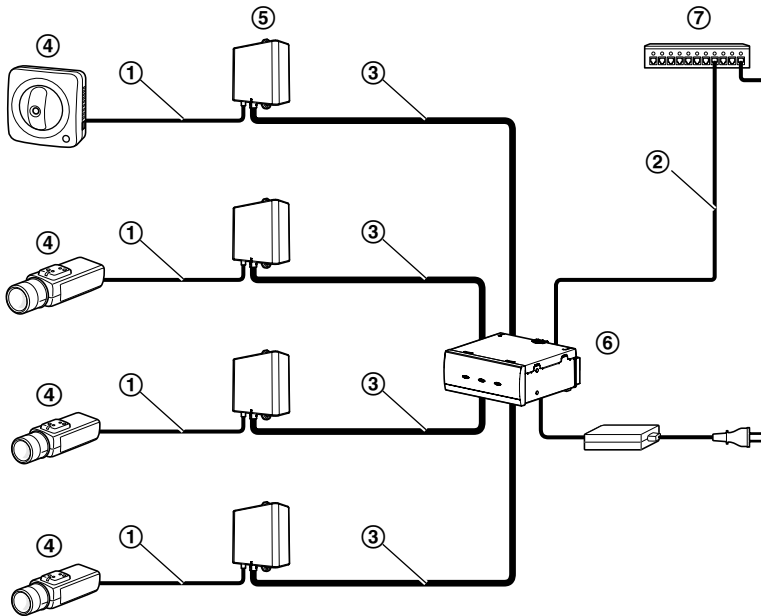
https://i-pro.com/global/en/surveillance/training_support/support/technical_information

^{*2} When connecting a PoE camera or PoE+ camera to an external power supply, make sure to use the included PoE incompatible cable. When the camera side unit can be installed near the camera, connect the PoE incompatible cable directly to the camera. When the camera side unit is installed far from the camera, use the included cable coupler (page 33). When a PoE incompatible cable is used, power is not supplied from camera side unit to the camera. **PC200**

Make sure to turn the PoE switch to "OFF" if the PoE camera or PoE+ camera is connected to an external power supply. **PC200**

4-channel Receiver Side Unit connection example

In this example, the camera is powered by PoE and the receiver side unit is powered by an AC adaptor.



- ① Ethernet cable (Cat-5e or higher, straight)
- ② Ethernet cable (Cat-5e or higher, straight)
- ③ Coaxial cable
- ④ Camera
- ⑤ Camera side unit
- ⑥ Receiver side unit
- ⑦ Switching hub

IMPORTANT

- A BY-HPE11KTA coaxial - LAN converter cannot be connected.
 - Use Cat-5e or higher Ethernet cables.
 - Use 8-wire (4-pair) Ethernet cables.
 - Use an Ethernet cable to connect the camera directly to the camera side unit. Do not connect a hub between the camera and the camera side unit, and do not make connections with multiple Ethernet cables.
- In the specifications of the WJ-PC200 (camera side unit with PoE incompatible cable), when a PoE or PoE+ camera is powered by an external power supply, use a PoE incompatible cable (included with the camera side unit) to connect the camera to the camera side unit. **PC200**
- After disconnecting an Ethernet cable, wait at least 2 seconds before connecting it again. If the cable is reconnected too quickly, power may not be supplied from the PoE power supply.

4 Connecting the Unit

- Some crossover-type Ethernet cables cannot supply power using PoE.

4.2 Connections

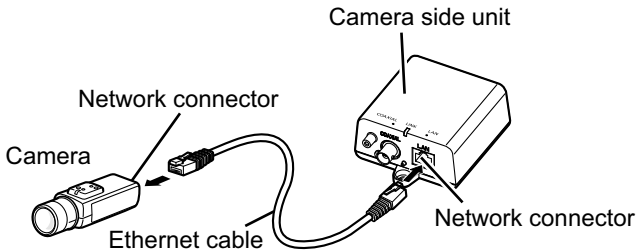
Before proceeding with the connections, turn off the power of the unit and other network devices that will be connected.

Prepare the necessary peripheral equipment and cables.

The ethernet cable and coaxial cable are locally procured.

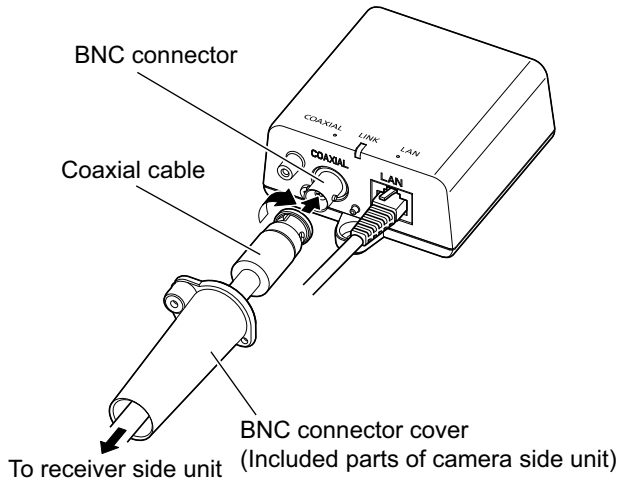
IMPORTANT

- When using an AC adaptor, make all other connections before finally connecting the AC adaptor's plug to the power outlet.
 - When using a PoE power supply device, connect the PoE power supply device to the network connector of the receiver side with an Ethernet cable.
1. Connect a ethernet cable (Cat-5e or higher) to the camera side unit and network camera.



- When using an external power supply to supply power to a PoE or PoE+ camera, refer to page 32.

2. First pass the coaxial cable through the BNC connector cover (accessory), then connect the coaxial cable to the BNC connector of the camera side unit.

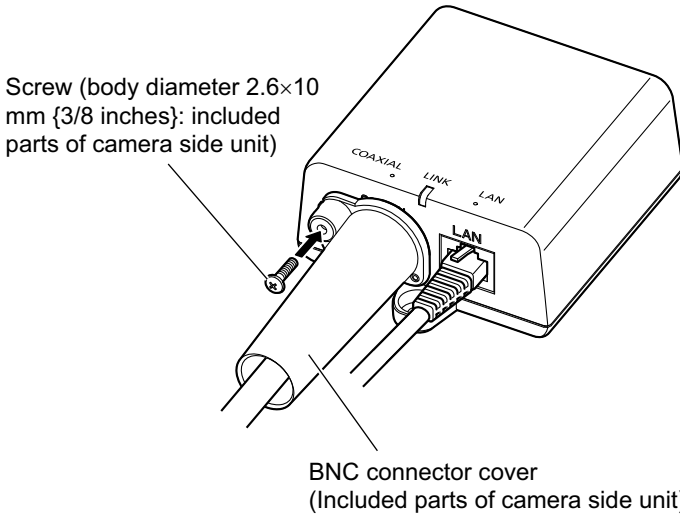


IMPORTANT

- When connecting the coaxial cable to the unit, make sure that no other devices are connected to the coaxial cable. Connecting the coaxial cable to the unit when there are other devices connected (such as an analog CCTV camera), may cause damage to the connected device.
- When using existing coaxial cables, disconnect other devices that are connected to the coaxial cable before connecting to the unit.
- Measure the insulation resistance of the coaxial cable (new or existing) before making connections.
Insulation resistance value: 1 M Ω or more for DC 500 V
- Confirm the length of the coaxial cable when using the PoE function (see page 31, page 33).

4 Connecting the Unit

- Secure the BNC connector cover using the screw (included parts of camera side unit) to the camera side unit.
(Recommended torque 0.6 ± 0.2 N·m { 6 ± 2 kgf·cm})

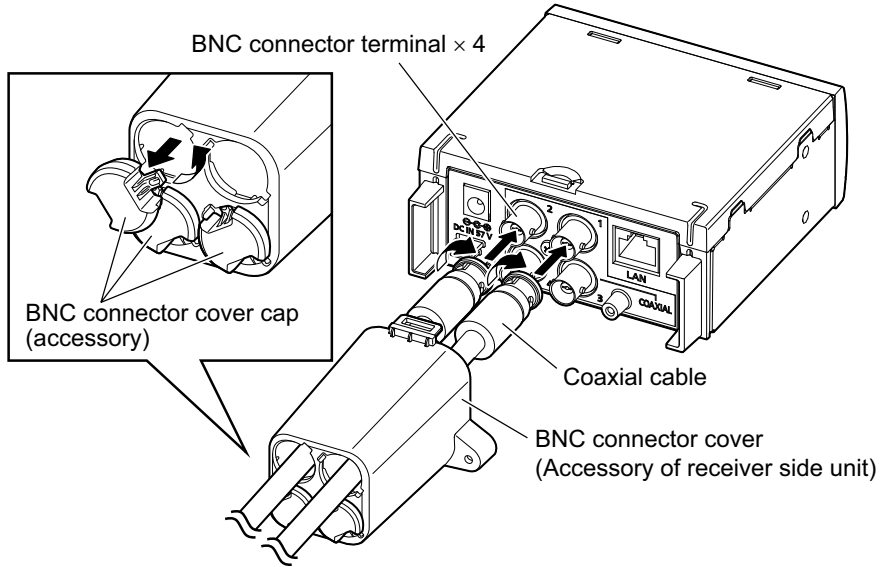


- First pass the coaxial cable through the included BNC connector cover (accessory), then connect the coaxial cable to the BNC connector of the receiver side unit.
 - When connecting 2 or more coaxial cables to the 4-channel receiver side unit, remove the BNC connector cover caps (accessory) and pass the coaxial cables through the BNC connector cover.
 - When passing the coaxial cables through the BNC connector cover as shown in the figure below and connecting the cables to the BNC connector terminals of the receiver side unit, make sure that the coaxial cables are inserted straight into the BNC connector cover so that they do not become crossed inside the cover.

Note

- The BNC connector cover cap (accessory) of the BNC connector cover (accessory) are shipped from the factory in such a way that the cables are connected to ch2, ch3, and ch4 terminals.
- When removing the BNC connector cover cap (accessory), rotate it slightly to the left.

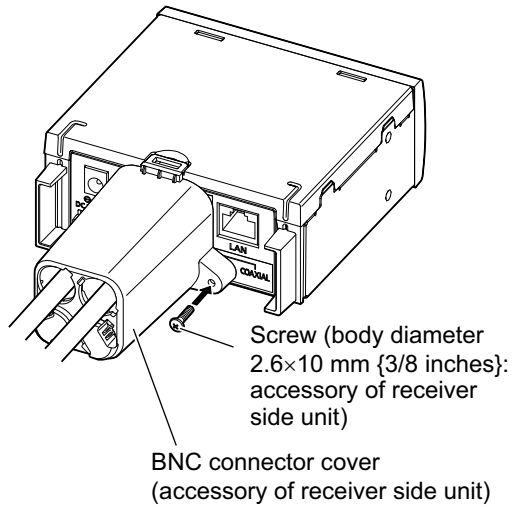
- Keep the removed BNC connector cover cap (accessory) for future use.



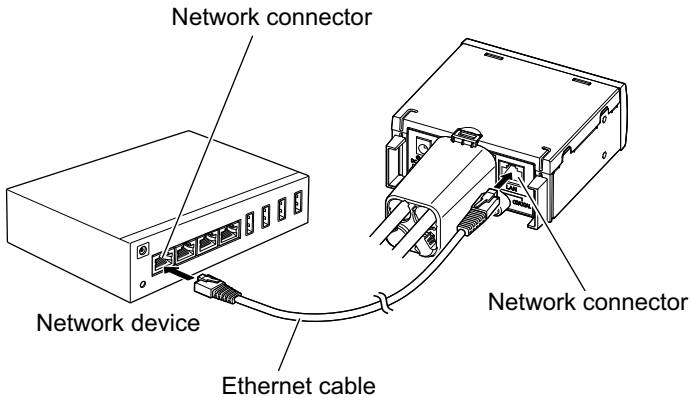
- The illustrations below show an example to establish the 2-channel connection to a 4-channel unit model. The procedure is the same as for a 1-channel unit model.

4 Connecting the Unit

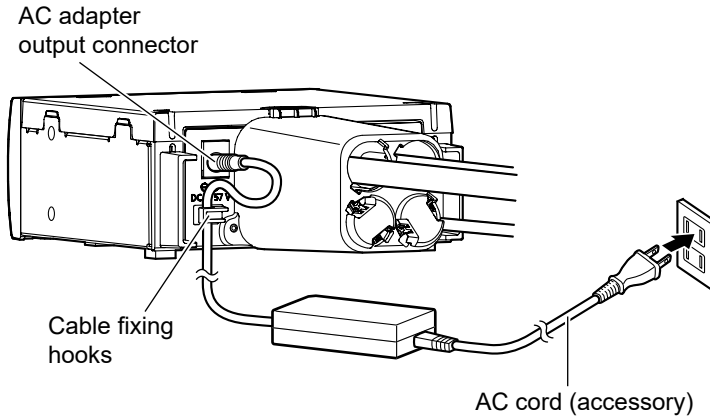
- Secure the BNC connector cover with included the screw (M2.6 × 10 mm {3/8 inches}: included parts) to the receiver side unit.
(Recommended torque 0.6±0.2 N·m {6±0.2 kgf·cm})



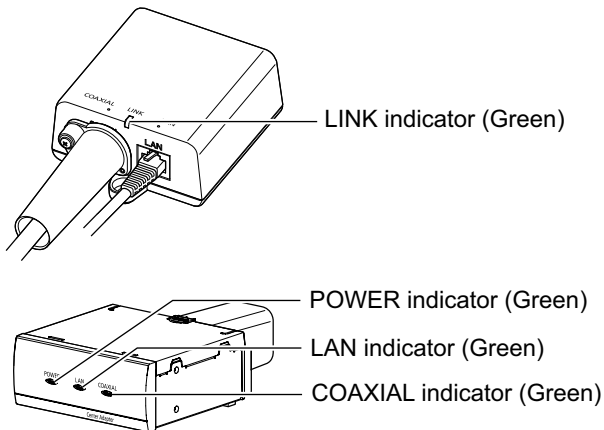
- Connect a ethernet cable (Cat-5e or higher) to the receiver side unit and network or PoE power supply device.



7. Connect the output connector of the AC adapter (accessory) to the DC jack at the rear of the receiver side unit, and plug the AC power cord into the power outlet.



- Secure the cables from the AC adapter output connector using the cable fixing hooks at the rear of the receiver side unit.
 - Do not place the AC adaptor on top of the receiver side unit.
 - When you operate the receiver side unit, the power outlet should be near the receiver side unit and easily accessible. To prevent the AC cord from being disconnected if it is pulled, do not place objects near the power outlet.
8. Turn the power on for the network cameras and network devices, then check the indicators of the camera side unit and the receiver side units.



- If the indicator does not light correctly, see “Troubleshooting” on page 53.

4 Connecting the Unit

9. Check the camera shooting screen on the PC, via the coaxial - LAN converter.
 - Connect the PC to the system, open Internet Explorer, enter the IP address of the camera, and press the Enter key. The live image of the connected camera is displayed on the PC screen.
<If the factory default IP address of the camera is "192.168.0.10">
Address to enter: "http://192.168.0.10/"
 - For the PC settings, see the camera's Operating Instructions.

5 Maintenance Screen of coaxial - LAN converter

The maintenance screen can be displayed on the web browser of a PC connected to the network connector of a coaxial - LAN converter.

Settings such as the following can be performed in the maintenance screen.

- firmware version updates
- Coaxial - LAN converter status confirmation
- IP address changes

IMPORTANT

- To display the setting screen of a camera that is already mounted and connected, temporarily disconnect the ethernet cable from the camera side unit or the receiver side units, and directly connect the cable to the setting PC (see page 46).
- In order to access the coaxial - LAN converter's maintenance screen, you must temporarily change the IP address assigned to your computer. Before you change the IP address of your computer, note the IP address and network settings already assigned to your computer.
- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.
- If you plan to update the adapter's firmware, download the latest version of the coaxial - LAN converter's firmware from our support site (https://i-pro.com/global/en/surveillance/documentation_database) and save it on the computer before you change the IP address of the computer.

5.1 Accessing the Maintenance Screen

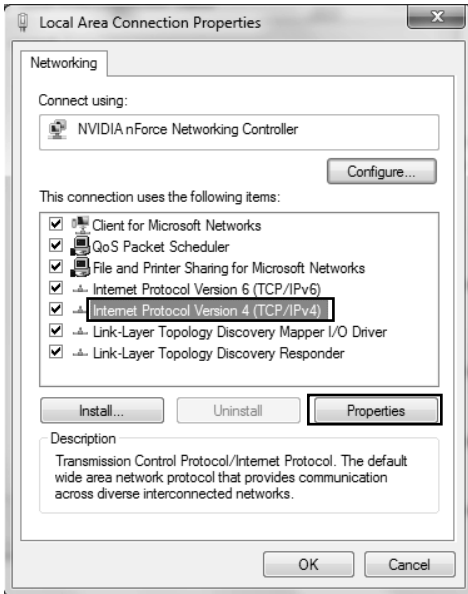
5.1.1 Temporarily Changing the Computer’s IP Address

Temporarily change the IP address assigned to your computer to access the coaxial - LAN converter’s maintenance screen.

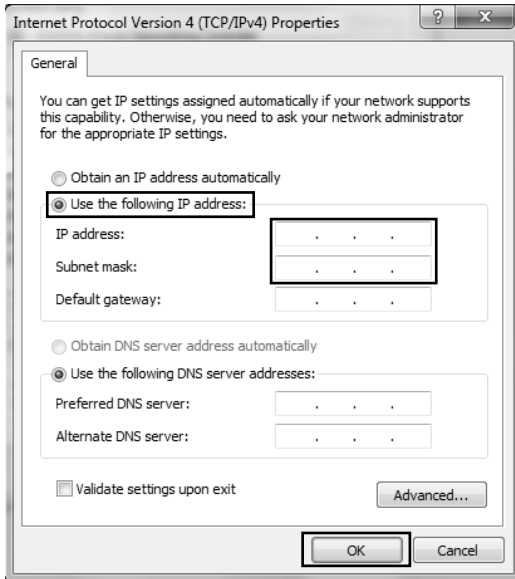
The procedure for changing the IP address differs depending on the operating system used.

The following explains how to change the IP address of the PC in the Windows 7 system. In Microsoft® Windows 7, this procedure must be performed by either the “Administrator” user, or a user assigned with administrator level privileges. Refer to the help file included with the operating system for more information.

1. Click [Start]→[Control Panel]→[View network status and tasks].
2. Click [View your active networks]→[Local Area Connection].
3. Click [Properties] under [Local Area Connection Status].
4. Select [Internet Protocol Version 4 (TCP/IPv4)], then click [Properties].



5. Select [Use the following IP address], then click [OK] after entering the IP address (192.168.249.***) and Subnet mask (255.255.255.0). Substitute "***" in "192.168.249.***" with any number between 1 and 254 other than 249 (this is the address assigned to the receiver side unit).



- If an IP address has already been set, make a note of the current IP address and other settings so that you can return the computer to those settings after you have connected and configured the unit.
6. Click [Close] to exit the [Local Area Connection Properties] screen.

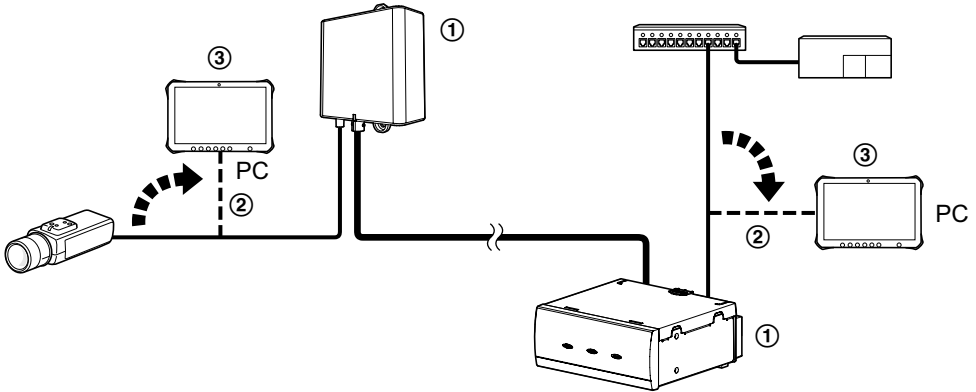
IMPORTANT

- The procedure for changing the IP address may change depending on whether the viewing method or Windows 7 is set to [Large icons] or [Small icons]. Refer to the help file supplied with the operating system for more information.

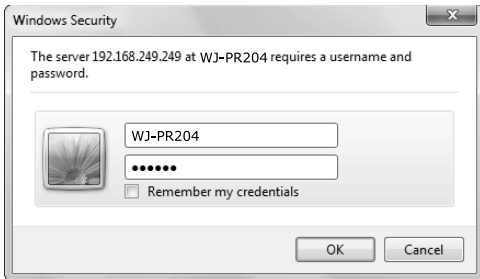
5.1.2 Accessing the Maintenance Screen

Follow the procedure below after you have changed the IP address of the computer.

1. Connect the camera side unit or the receiver side unit (①) directly to a computer (③) using an ethernet cable (②). When connecting the camera side unit to a PC, make sure it is connected to the receiver side unit with a coaxial cable, and that the receiver side unit is turned on.



2. Start the computer's web browser.
3. Enter `http://192.168.249.249/` in the web browser's address bar.
4. Enter the user name and password.
 - Default user name: Model no.
 - Default password: 999999
 - The screen shown here depicts the screen shown when using Windows 7.



Model no.	User name	Password
WJ-PR204/WJ-PR204E	WJ-PR204	999999
WJ-PR201/WJ-PR201E	WJ-PR201	999999
WJ-PC200/WJ-PC200E	WJ-PC200	999999

5. Click [OK].
 - The maintenance screen is displayed.

Receiver side unit

WJ-PR204	Status	
	Displays status of this PLC unit.	
Status	Boot version	■■■■■
Option	Firmware version	■■■■■
Pairing	Operation mode	Receiver side unit
Upgrade	MAC address of the PLC adaptor	■■■■■
Restart	Other master	■■■■■
Copyright		
<input type="button" value="Refresh"/>		

Camera side unit

WJ-PC200	Status	
	Displays status of this PLC unit.	
Status	Boot version	■■■■■
Option	Firmware version	■■■■■
Pairing	Operation mode	Camera side unit
Upgrade	MAC address of the PLC adaptor	■■■■■
Restart	Other master	■■■■■
Copyright	PLC link status	Connected
	MAC address of the Master	■■■■■
<input type="button" value="Refresh"/>		

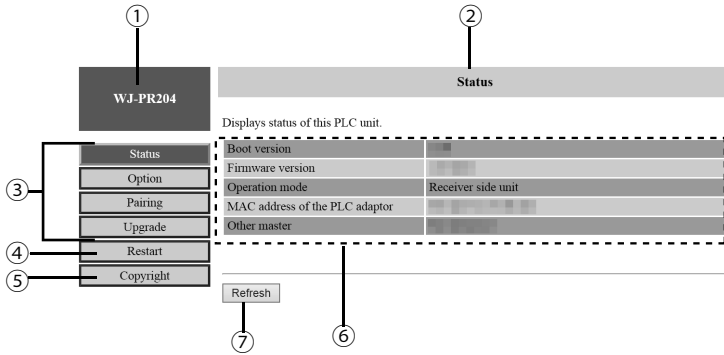
Note

- The screens used in this manual show the case of firmware V1.031fM.

IMPORTANT

- Only a PC connected to the coaxial - LAN converter's network connector can display the maintenance screen and perform firmware updates, etc.
- The maintenance screen is displayed in English.
- The display differs between the receiver side and the camera side units. The upper picture shows the display screen of the receiver side unit. The "PLC link status" and "MAC address of the Master" are only displayed on the screen of the camera side unit.

5.1.3 Maintenance Screen Overview



- ① Model number
- ② Name of current screen
- ③ Click to jump to the corresponding page
- ④ Click to restart the coaxial - LAN converter
- ⑤ Click to view the copyright information
- ⑥ Contents of the current screen
- ⑦ Click to update the displayed information

Note

- The [Terminal List] button displayed when [Option] is clicked does not function normally.
- For information about the [Pairing] button, refer to our support site below.
https://i-pro.com/global/en/surveillance/training_support/support/technical_information

IMPORTANT

- When consecutively connecting coaxial - LAN converters to the computer to access their maintenance screens, because the information (ARP table) of the previously connected coaxial - LAN converter is retained, the maintenance screen may not be able to be opened. Therefore, we recommend restarting the computer before connecting it to another coaxial - LAN converter and accessing its maintenance screen.

You may reset the computer's ARP table if you do not want to restart the computer. Refer to the help file or operating instructions included with the operating system for more information.

Resetting the ARP table when using Windows 7

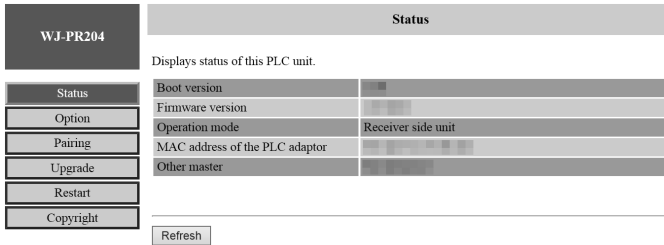
1. Display the command prompt by clicking [Start]→[All Programs]→[Accessories]→[Command Prompt].
2. Enter `arp -d`, then press [Enter].

5.2 Using the Maintenance Screen

5.2.1 Confirming the coaxial - LAN converter's Status

You can confirm the information in the table below, such as the firmware version, MAC address of the coaxial - LAN converter, and the connection status of other coaxial - LAN converters on the [Status] screen.

1. Access the maintenance screen of the coaxial - LAN converter.
2. Click [Status].



The screen shown above is the maintenance screen of the receiver side unit.

IMPORTANT

- The screen shown here depicts the screen shown when accessing a receiver side unit. The screen displayed for the receiver side unit and camera side unit is different. [PLC link status] and [MAC address of the Master] are displayed on the camera side unit's screen.

Items	Description
Boot version	Displays the coaxial - LAN converter's boot version.
Firmware version	Displays the coaxial - LAN converter's firmware version.
Operation mode	Displays the coaxial - LAN converter type (receiver side unit or camera side unit). Camera side units are displayed as [Terminal], and receiver side units are displayed as [Master].
MAC address of the PLC adaptor	Displays the MAC address of the connected coaxial - LAN converter.
Other master	Indicates whether other receiver side units exist on the network. If other receiver side units exist on the network, [Detected] is displayed, if they do not exist, [Not Detected] is displayed. Communication performance may be affected if other receiver side units are detected.
PLC link status (only displayed for the camera side unit)	Displays the status of the connection between the camera side unit and receiver side unit. [Connected] is displayed when there is a connection, and [Disconnected] is displayed when there is no connection.

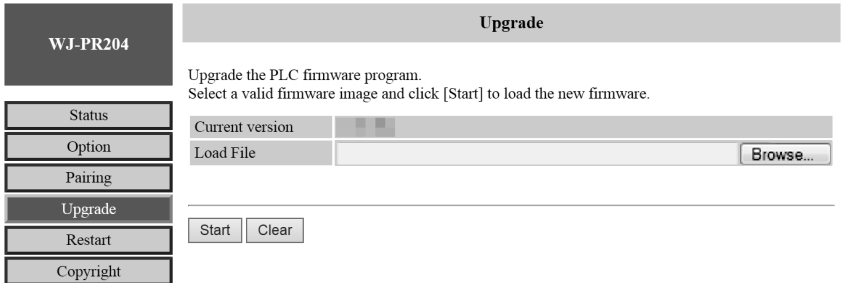
5 Maintenance Screen of coaxial - LAN converter

Items	Description
MAC address of the Master (only displayed for the camera side unit)	Displays the MAC address of the connected receiver side unit.

5.2.2 Updating the coaxial - LAN converter's Firmware

Make sure you download the latest version of the coaxial - LAN converter firmware from our support site (https://i-pro.com/global/en/surveillance/documentation_database) and save it to the computer before changing the computer's IP address and accessing the maintenance screen.

1. Access the maintenance screen of the coaxial - LAN converter.
2. Click [Upgrade].



3. Click [Browse...], select the firmware file, then click [Open].
4. Click [Start].
5. Click [OK] when prompted.
 - The firmware will be updated, and then the adapter will automatically restart. After restarting, the updated firmware is used.

IMPORTANT

- When you update the coaxial - LAN converter firmware, be sure to download the latest version of the coaxial - LAN converter's firmware to the PC before changing the IP address of the PC. You can download the firmware from our support site (https://i-pro.com/global/en/surveillance/documentation_database).
- Update the firmware for both the camera side unit and receiver side unit.
- Do not disconnect the receiver side unit from the power source until the update is completed.
- After you have updated the firmware, confirm the coaxial - LAN converter's firmware version on the [Status] screen (see page 49).

5.2.3 Changing coaxial - LAN converter's Settings

The IP address for accessing the maintenance screen can be changed.
The camera side and receiver side units can be connected at their default settings.
Multiple units on the receiver side can also be connected at their default setting.

Changing the coaxial - LAN converter's IP address

You may change the coaxial - LAN converter's IP address and subnet mask if necessary. Change the IP address in cases such as when the coaxial - LAN converter is using the same IP address as another network device, or if you want to match the address used in the network. Change the IP address to an address different from the one used by the device that is to be connected to the camera side unit.

1. Access the maintenance screen of the coaxial - LAN converter.
2. Click [Option].

The screenshot shows the maintenance screen for the WJ-PR204 device. On the left is a vertical menu with options: Status, Option (highlighted), Pairing, Upgrade, Restart, and Copyright. The main area is titled 'Option' and contains a sub-section 'IP Address' with a 'Terminal List' tab. Below this, there are input fields for 'IP Address' and 'Subnet mask'. A text prompt reads: 'Setup of IP address for this unit. Enter valid address and press [OK] to restart the system.' At the bottom of the main area are 'OK' and 'Clear' buttons.

3. Enter the desired IP address.
4. Enter the subnet mask if necessary.
5. Click [OK], then click [OK] when prompted.
6. Click [Restart].
 - The adapter will restart, and the new settings will take effect. The new IP address must be entered in the web browser's address bar in order to access the adapter's maintenance screen again.
7. Click [Restart], then click [Reset] button in the restart tab.

The screenshot shows the maintenance screen for the WJ-PR204 device with the 'Restart' tab selected. The left menu has 'Restart' highlighted. The main area is titled 'Restart' and contains the instruction: 'Click [Reset] button to restart the system.' A 'Reset' button is visible in the main area.

After restarting, make connections using the changed IP address displayed in the maintenance screen.

IMPORTANT

- Match the IP address and subnet mask settings to those used in your network.
- Be sure to write down the new IP address and keep a note for future reference.

6 Troubleshooting

Before sending the unit in for repairs, check if the problem can be resolved by following the troubleshooting steps.

If the problem cannot be solved by the steps in the troubleshooting, contact an authorized service center.

6.1 Indicator Display Issues

Problem	Cause and Remedy
All the indicators are not lit.	<ul style="list-style-type: none"> • The receiver side unit may not be receiving power. <ul style="list-style-type: none"> → Confirm that the AC cord is connected to the power outlet and the AC adapter output connector is connected to the DC jack of the receiver side unit (see page 41). • If the receiver side unit is being used with a PoE power supply, is the PoE power supply device and the network connector connected with an Ethernet cable (category 5e or better, 4 pairs × 8 strands connection) under 5 m long? <ul style="list-style-type: none"> → Please confirm if it is connected (see page 31, 33, 35, 40).
Only the camera side unit's indicator is not lit.	<ul style="list-style-type: none"> • The coaxial cable is not connected. <ul style="list-style-type: none"> → Connect the coaxial cable (see page 37, 38). → Confirm that the coaxial cable is not too long and is connected properly (see page 31, 33, 36). → Confirm that there are no connection problems such as damage or breaks in the cable.
The camera side unit's LINK indicator is lit red.	<ul style="list-style-type: none"> • Data cannot be sent because the camera side unit may be malfunctioning. <ul style="list-style-type: none"> → Contact an authorized service center.
The receiver side unit's LAN indicator is lit orange.	<ul style="list-style-type: none"> • A network device is not connected to the network connector. <ul style="list-style-type: none"> → The LAN indicator lights in green when a network device is connected with a ethernet cable (see page 40). • The network device connected to the network connector may not be receiving power. <ul style="list-style-type: none"> → Connect the network device to a power outlet. • A network device is not connected to the network connector with a ethernet cable. <ul style="list-style-type: none"> → Confirm that the ethernet cable is connected properly and that there are no connection problems such as damage or breaks in the cable (see page 40).

6 Troubleshooting

Problem	Cause and Remedy
<p>The receiver side unit's COAXIAL indicator is not lit.</p>	<ul style="list-style-type: none"> • The unit is not receiving power. <ul style="list-style-type: none"> → Confirm that the AC cord is connected to the power outlet and the AC adapter output connector is connected to the DC jack of the receiver side unit (see page 41). • If the receiver side unit is being used with a PoE power supply, is the PoE power supply device and the network connector connected with an Ethernet cable (category 5e or better, 4 pairs × 8 strands connection) under 5 m long? <ul style="list-style-type: none"> → Please confirm if it is connected (page 31, 33, 35, 40). • The coaxial cable is not connected. <ul style="list-style-type: none"> → Confirm that the coaxial is not too long and is connected properly (see page 31, 33). → Confirm that there are no connection problems such as damage or breaks in the cable. • The camera side unit is not connected. <ul style="list-style-type: none"> → Connect the camera side unit and receiver side unit with a coaxial cable. <p>Note</p> <p>When using the WJ-PR204, the indicator lights even if only 1 camera is connected to the camera side unit when a coaxial cable is connected.</p>
<p>The receiver side unit's COAXIAL indicator is lit red.</p>	<ul style="list-style-type: none"> • Data cannot be sent because the receiver side unit may be malfunctioning. <ul style="list-style-type: none"> → Contact an authorized service center.

6.2 Transmission Speed

Problem	Cause and Remedy
<p>The LINK indicator of camera side goes off, or transmission is unstable.</p>	<ul style="list-style-type: none"> • The unit is affected by the installation environment and other factors, and cannot secure an adequate transmission speed. <ul style="list-style-type: none"> → Check the connection states such as the type and length of the coaxial cable and whether any equipment is emitting high-intensity radio waves in the vicinity of the unit. → Confirm that the AC power supply voltage is within the specified range, and that no noise is emitted.

6.3 When the receiver side unit is used with a PoE power supply

Problem	Cause and Remedy
The camera does not operate when both an AC adaptor and a PoE hub are connected to the receiver side unit.	<ul style="list-style-type: none"> • The PoE software setting for the hub is not completed because of a phenomenon where connections cannot be completed because the PoE software repeatedly tries to configure itself. <ul style="list-style-type: none"> → Some hubs cannot handle PoE and AC adaptor connections at the same time. In this case, either disconnect the AC adaptor or turn off the PoE function for the PoE hub.

6.4 PoE+/PoE Issues

Problem	Cause and Remedy
PoE+/PoE cameras connected to the camera side unit do not function.	<ul style="list-style-type: none"> • The connection distance may be too long. <ul style="list-style-type: none"> → The PoE function cannot supply power to devices connected at distances. → Confirm that the connected ethernet cable is connected properly and is a PoE standard cable (see page 31, 33), and that there are no connection problems such as damage or breaks in the cable. • The combination of PoE+/PoE cameras is incorrect. <ul style="list-style-type: none"> → When using a 4-channel receiver side unit, there is a limit to the amount of power than can be supplied to PoE/PoE + cameras. Confirm the total amount of power required by all cameras that will receive power from the receiver side unit. • If the camera's Ethernet cable was quickly disconnected and then reconnected, the PoE+/PoE function may not be able to supply power. <ul style="list-style-type: none"> → Disconnect the ethernet cable and then reconnect after waiting for more than 2 seconds. • The PoE on/off switch is turned to "OFF". PC200 <ul style="list-style-type: none"> → Turn the PoE on/off switch to "ON" and connect power to the PoE+/PoE camera.

6.5 Other Issues

Problem	Cause and Remedy
The AC adapter is warm.	<ul style="list-style-type: none"><li data-bbox="348 248 1008 331">• This is normal. → If the unit gets extremely hot, disconnect the power plug and contact an authorized service center.
Other than those above	<ul style="list-style-type: none"><li data-bbox="348 352 985 427">• Refer to our support site below. → https://i-pro.com/global/en/surveillance/training_support/support/technical_information

7 Specifications

Receiver side unit

Items	Specifications
Power Supply	Use the included AC adapter. <ul style="list-style-type: none"> INPUT: 100-240 V/ 50/60 Hz OUTPUT: DC 57 V/ 1.14 A Use the PoE power supply. <ul style="list-style-type: none"> PoE DC 48 V/ Approx.265 mA
Power Consumption	Use the included AC adapter. <ul style="list-style-type: none"> DC 57 V/ 700 mA/ Approx. 40 W PR201 DC 57 V/ 1.14 A/ Approx. 65 W PR204 Use the PoE power supply. <ul style="list-style-type: none"> PoE DC 48 V: 265 mA/Approx. 12.95 W (Class 0 device)
Operating Environment	Temperature: 0 to 50 °C {+32 °F to +122 °F} Humidity: 10 to 90 % (without condensation)
Storage Environment	Temperature: -20 to 60 °C {-4 °F to +140 °F} Humidity: 10 to 95 % (without condensation)
Interfaces	10BASE-T/100BASE-TX × 1 BNC connector × 1 PR201 BNC connector × 4 PR204
Dimensions (W×H×D)	Width: approx. 105 mm {4-5/32 inches}, Height: approx. 44 mm {1-3/4 inches}, Depth: approx. 98 mm {3-7/8 inches} When a BNC connector cover is mounted: Width: approx. 105 mm {4-5/32 inches}, Height: approx. 44 mm {1-3/4 inches}, Depth: approx. 165 mm {6-1/2 inches}
Mass (Weight)	About 250 g (0.55 lb) PR201 About 270 g (0.60 lb) PR204
Finish	Main unit: PC/ABS, silver BNC connector cover (1 ch.): ABS, white PR201 BNC connector cover (4 ch.): PC/ABS, gray PR204

7 Specifications

Camera side unit

Items	Specifications
Power Supply	Original power system (from the receiver side unit via the coaxial cable)
Operating Environment	Temperature: -10 to 50 °C {+14 °F to +122 °F} Humidity: 10 to 90 % (without condensation)
Storage Environment	Temperature: -20 to 60 °C {-4 °F to +140 °F} Humidity: 10 to 95 % (without condensation)
Interfaces	10BASE-T/100BASE-TX × 1 BNC connector × 1
Dimensions (W×H×D)	Width: approx. 76 mm {3 inches}, Height: approx. 76 mm {3 inches}, Depth: approx. 36 mm {1-7/16 inches} When a BNC connector cover is mounted: Width: approx. 76 mm {3 inches}, Height: approx. 156 mm {6-5/32 inches}, Depth: approx. 36 mm {1-7/16 inches}
Mass (Weight)	About 110 g (0.24 lb)
Finish	Main unit: PC/ABS, sail white BNC connector cover (1 ch.): ABS, white

Coaxial Interface

Items	Specifications
Standard	i-PRO original system
Frequency Range	2 MHz–28 MHz
Data Transfer Mode	Wavelet OFDM
Access Method	CSMA/CA
Error Correction	Reed-Solomon Code + Convolutional Code (Viterbi decoding)

LAN Interface

Items	Specifications
Standard	IEEE802.3/IEEE802.3u (10BASE-T/100BASE-TX)
MDI/MDI-X	Cross/Straight cable automatic recognition
Transmission Rate	10 Mbps/100 Mbps (Auto-Sensing)

Items	Specifications
Number of Ports	1 (RJ45 connector)
Protocol	TCP/IP, UDP
Access Method	CSMA/CD

Connection Specifications

Items	Specifications
Camera side unit that can be communicated with	Up to 4 camera side units can be connected. ^{*1} PR204 One camera side unit can be connected. PR201
Connectable Devices	Receiver side unit: devices equipped with 10BASE-T/ 100BASE-TX interfaces (Examples: PC, network recorder and others) Camera side unit: PoE camera, PoE+ camera, or camera driven by external power ^{*2}
Number of devices that can be connected	A maximum of 128 receiver side units or camera side units can be connected in 1 segment

^{*1} There are restrictions regarding combining cameras. For more information, see page 33. For information about the specified cameras, visit our website:
https://i-pro.com/global/en/surveillance/training_support/support/technical_information

^{*2} The maximum distance that can be connected with a coaxial cable varies depending on the camera used. For more information, see page 31, 33. For information about the specified cameras, visit our website:
https://i-pro.com/global/en/surveillance/training_support/support/technical_information

Maintenance Screen Specifications

Items	Specifications
Compatible Operating Systems	Microsoft Windows 8.1 Microsoft Windows 8 Microsoft Windows 7 Microsoft Windows Vista
Web Browser	Windows Internet Explorer 11 32 bit Windows Internet Explorer 10 32 bit Windows Internet Explorer 9 32 bit Windows Internet Explorer 8 32 bit Windows Internet Explorer 7 32 bit

7 Specifications

Performance Specifications

Items	Specifications
Transmission Speed ^{*1} (When the AC adapter (accessory) is used)	UDP: 45 Mbps or higher; TCP ^{*2} : 35 Mbps or higher (when using an RG-6/U coaxial cable at distances under 500 m (1,640 feet) PR204) (when using an RG-6/U coaxial cable at distances under 2.0 km (6,560 feet) PR201)
Maximum Transmission Distance of a RG-6/U Coaxial Cable (When the AC adapter (accessory) is used) ^{*4}	200 m (656 feet): PoE+ camera 300 m (984 feet): Recommended PoE+ camera ^{*3} 300 m (984 feet): PoE camera 500 m (1,640 feet): Recommended PoE camera ^{*3} 500 m (1,640 feet): Camera powered by an external power supply PR204 2.0 km (6,560 feet): Camera powered by an external power supply PR201

^{*1} This value is the total value of the transmission speed between the receiver side and camera side unit. The transmission speed when using an RG-6/U coaxial cable may vary depending on factors such as the coaxial cable condition and network environment. The values shown here measured in environments not affected by cable or network environment conditions.

^{*2} Measured using Linux® FTP.

^{*3} For information about recommended cameras to be used for the camera side unit, see our website: https://i-pro.com/global/en/surveillance/training_support/support/technical_information

^{*4} For details of the connection conditions, see page 31.

Accessories

Rack Mount Connecting Fitting

- BY-HCA10A: WJ-PR204, WJ-PR201
- BY-HCA10CE: WJ-PR204E, WJ-PR201E

Disposal of Old Equipment and Batteries
Only for European Union and countries with recycling systems



This symbol on the products, packaging, and/or accompanying documents mean that used electrical and electronic products must not be mixed with general household waste.

For proper treatment, recovery and recycling of old products, please take them to applicable collection points in accordance with your national legislation.

By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.

For more information about collection and recycling, please contact your local municipality.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

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<https://www.i-pro.com/>

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