i-PRO

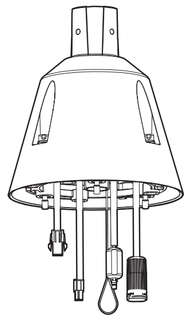
Operating Instructions

Included Installation Instructions

Extension Unit

For professional use only | Outdoor use

Model No. WV-X65F1



- Before attempting to install this product, please read these instructions carefully and save this manual for future use.

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

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PGQX2594ZA
Ns0522-0
Printed in China

Caution:

- This product has no power switch. Be sure to install disconnect devices such as a circuit breaker to shut down the main power of power supplying equipment to this product.
- Only connect 24 V AC Class 2 power supply (UL 1310/CSA 223), limited power source (IEC/EN/UL/CSA 60950-1, IEC/EN/UL/CSA 62368-1 Annex Q) or IEC/EN/UL/CSA 62368-1 PS2.
- Before attempting to connect or operate this product, please read these instructions carefully.

Notice:

- This product is not suitable for use in locations where children are likely to be present.
- Do not install this product in locations where ordinary persons can easily reach.
- This product is a professional equipment.
- For information about screws and other parts required for installation, refer to the corresponding section of this document.

: Alternating current symbol

: Direct current symbol

Class1 LASER PRODUCT

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: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Supplier's Declaration of conformity
Trade name : i-PRO
Model No. : WV-X65F1
Responsible Party :
i-PRO Americas Inc.
8550 Fallbrook Drive, Suite 200 Houston,
Texas 77064
Support Contact : 1-800-513-5417

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 U.S.A.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For Canada

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

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

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste.
For proper treatment, recovery and recycling of old products and used batteries, 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 authority.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

About the user manuals

"<Control No.: C****>" used in this document should be used to search for information on our technical information website and will guide you to the right information.
https://i-pro.com/global/en/surveillance/training-support/support/technical-information

Note:

- 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.

Preface

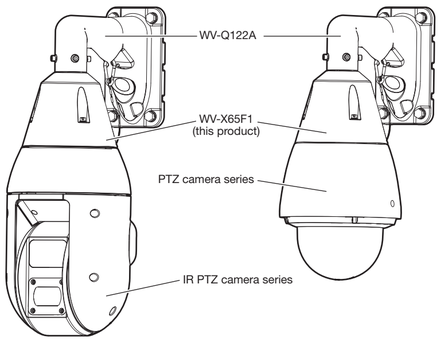
This product is the "Optical interface option unit" for outdoor use PTZ (PAN, TILT, ZOOM) type network camera.

Main functions

Achievement of SFP (Small Form Factor Pluggable) module (locally procured) installation
Replacement of the network cable connected to a camera with an optical fiber cord using this product can extend a transmission distance.

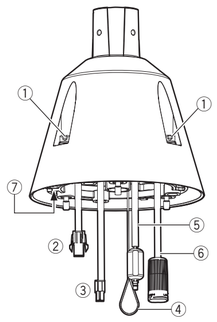
The following are descriptions when combining natural silver brackets.

Design integrated with our outdoor PTZ camera
This product is installable between our PTZ-type camera and WV-Q121B (Ceiling mount bracket), WV-Q122A (Wall mount bracket).



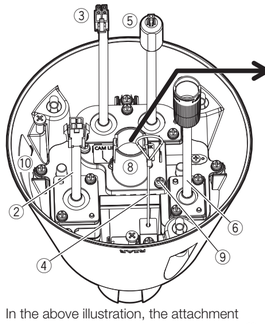
Parts and functions

[Whole unit]

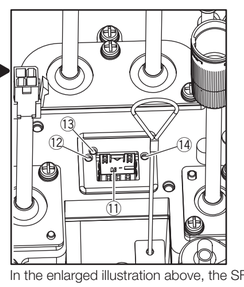


① **Hexagonal socket head special screws (3 positions)**
Fixes a camera body and this product.
② **24 V AC input cable**
Connects 24 V AC power source that is supplied to this product and a camera.
③ **24 V AC output cable**
Supplies 24 V AC power source to a PTZ-type camera.
④ **Installed auxiliary wire**
Hangs a camera temporarily.
⑤ **12 V DC output cable**
Supplies 12 V DC power source to a Dome-type camera. (Unused with this product)
⑥ **RJ45 waterproof cable**
Connects an Ethernet cable to a camera.
⑦ **Attachment ring**
Connects this product to a camera.
⑧ **SFP cap**
Protects the SFP module mounting part in a waterproof manner.
⑨ **SFP cap fixing screws (2 positions)**
Fixes SFP cap.
⑩ **Name plate**

[Bottom view]



In the above illustration, the attachment ring is removed.



In the enlarged illustration above, the SFP cap is removed.

⑪ **SFP module port**
⑫ **CAM LINK indicator (Camera Link)**
⑬ **Power indicator**
⑭ **SFP LINK indicator**

Precautions

Refer installation work to the dealer.
Installation work requires technique and experience. Failure to observe this may cause fire, electric shock, injury, or damage to the product.
- Be sure to consult the dealer.

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.

The exclusively designed mount bracket shall be used.
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.

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.

Install this product in a location high enough to avoid people and objects from bumping the product.
Failure to observe this may cause injury.

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.

Correctly perform all wiring
Short circuits in the wiring or incorrect wiring may cause fire or electrical shock.

Turn the power off when cleaning this product.
Failure to observe this may cause injury.

The measures of protection against a fall of this product shall be taken.
Failure to observe this may cause a drop resulting in injury or accidents.
Be sure to install the safety wire.

Do not sprinkle more water, exceeding the performance limit of waterproof with a high pressure cleaning machine, etc.
Fire or electrical shock may be caused by immersion.

If this device is used under high temperature environment, do not touch the SFP module with your hand.
Failure to observe this may cause injury or burns especially when the SFP module or optical fiber cord is attached or detached.

Do not connect equipment other than a product with compatible specifications to the connection part of the optical fiber cord of the SFP module.
Failure to observe this may cause fire, electric shock, or malfunction.

Do not directly look at laser light.
If you directly look at a laser light source, visual impairment may be caused.
(Class 1 laser product)

Do not engage or disengage the SFP module with or from the SFP module port with wet hand.
Failure to observe this may cause electric shock or malfunction.

Do not rub the edges of metal parts with your hand.
Failure to observe this may cause injury.

[Precautions for use]

To keep on using with stable performance
Do not use this product in hot and humid conditions for a long time. Failure to observe this causes component degradation resulting in life shortening of this product. Do not expose this product to direct heat sources such as a heater.

This product has no power switch.
When turning off the power, disconnect the power supply from the 24 V AC power supply .

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.

Do not subject the body to strong impact.
Doing so may cause damage or immersion.

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.
Do not loozen or remove screws unless instructed to do so in the product documentation.

Equipment classification and power source indication label
Refer to the indication label on the inside of this unit for the equipment classification, power source, and other information.

Precautions for installation

i-PRO Co., Ltd. assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.

In order to prevent injury, the product must be securely mounted to a bracket according to Installation Guide.

Power supply
This product has no power switch.
When performing electrical work, make sure this product can be turned on and off. When cleaning this product, turn off the system power supply.

Do not place this product in the following places:
- 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 near coasts directly subjected to sea breezes, or locations subject to corrosive gases such as from hot springs, volcanic regions, etc.
- Locations where the temperature is not within the specified range (☞ Back side)
- Locations subject to vibrations, such as on vehicles, marine vessels, or above product lines (This product is not designed for onvehicle use.)
- Locations subject to sudden changes in temperature such as near outdoor units of air conditioners

Sulfurization caused by rubber products
Do not place the product near rubber products (packing, rubber feet, etc.) that contain sulfur. There is a risk that sulfur components in rubber products may cause electrical parts and terminals, etc. to become sulfurized and corrode.

Screw tightening
- 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.

Take notice of humidity
Install this product when the humidity is low. If installation is performed when it is raining or in very humid conditions, the inside may be affected by humidity.

When noise disturbance may happen
Conduct the power distribution work to keep a distance of 1 m {3.28 feet} or more from the 120 V (for U.S. and Canada) or 220 V – 240 V (for Europe and other countries) power line.

Radio disturbance
Noise may appear in video or audio near a strong electric field from a TV or radio antenna, motors and transformers, or a strong electric field/magnetic field from a power line (lamp line) of AC 100 V or more.

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

Troubleshooting

Symptom	Cause / solution
The power of this product cannot be turned on.	• Does the power indicator on the side of the SFP module port light green? If the indicator does not light, the 24 V AC power source cannot be supplied to this product. → Check if the switch of the 24 V AC power source is set to ON. → Check if the processed connector pin is appropriately swaged. → Check if the connected connector is fully inserted. If no erroneous state is found with the above, it is likely that an error has occurred with this product. Contact your dealer.
Image data cannot be transmitted.	• Does the CAM LINK indicator or SFP LINK indicator on the side of the SFP module port light or blink? If these indicators do not light or blink, communication through the optical fiber cannot be made. → If the SFP LINK indicator does not light orange, cut off the 24 V AC power source to this product, disengage the SFP module once, and engage it again to check its operation. → Make sure that the connector of the optical fiber cord is appropriately connected to the SFP module. → Check if the optical fiber cord appropriately operates by replacing the optical fiber cord with new one. → If the CAM LINK indicator does not light orange, check if the RJ45 waterproof connector between this product and the camera is appropriately connected.

<Mountable models>

For the latest information about the mountable models
<Control No.: C0505>

Specifications

• Basic

Power source:	24 V AC (50 Hz/60 Hz)
Input power consumption:	24 V AC: 4.8 A / 77 W*1
Output power consumption:	24 V AC: 4.5 A / 72 W 12 V DC: 1.1 A / 13 W
Operating environment*2	
Ambient operating temperature:	–40 °C to +60 °C {–40 °F to +140 °F} (Power On range: –30 °C to +60 °C {–22 °F to +140 °F})
Ambient operating humidity:	10 % to 100 % (no condensation)
Storage environment	
Storage temperature:	–50 °C to +70 °C {–58 °F to +158 °F}
Storage humidity:	10 % to 95 % (no condensation)
Waterproof:*3	IP66 (IEC 60529)
Shock resistance:	IK10 (IEC 62262)
Dimensions:	ø174 mm × 186 mm (H) {ø6-27/32 inches × 7-5/16 inches (H)}
Mass:	Approx. 1.6 kg {3.53 lbs} (Including attachment ring (Approx. 200 g {0.44 lbs})
Finish:	**Main body:** Aluminum die cast, Natural silver: WV-X65F1 i-PRO white: WV-X65F1-W **Outer fixing screws:** Stainless steel (Corrosion-resistant treatment)

• Support specifications for SFP module

SFP Port Type:	LC type
Ethernet Speed:	100/1000 Mbps
Supply voltage, current:	3.3 V typical, Max. 300 mA
SFP Cage:	Standard mini-SFP cage (For 6.5 mm pitch SFP)
Required SFP's Bit Error Rate:	Max. 10-12

*1 The indicated power source and power consumption are the maximum value. They vary depending on the camera to be used. As a reference, the actual current consumption can be calculated in the formula below.
Current consumption = (Camera's current consumption + 0.3) A
*2 If the service temperature range and service humidity range of the SFP module in use are narrower than those of this product, apply the service ranges of the SFP module in use.
*3 Only when installation work is properly performed according to the Installation explanation and appropriate waterproof treatment is performed.

Standard accessories

Operating Instructions (this document).....1 pc.

The following parts are used during installation procedures.

Attachment ring.....1 pc.
Hexagonal socket head special screws (M6)... 5 pcs. (of them, 1 for spare)
Locking washers .....5 pcs. (of them, 1 for spare)
Waterproof tapes.....3 pcs.
Extended safety wire .....1 pc.
SFP packing.....1 pc.

Other items that are needed (not included)

[1] Prepare four mounting screws (M10) to be mounted on ceiling or wall separately.

Installation method	Mounting screw	Minimum pull-out strength/ 1pcs.
When hanging the camera from ceiling Use the ceiling mount bracket (WV-Q121B*1).	M10 screws/ 4 pcs.	1977 N {444 lbf}
When installing the camera on a wall Use the wall mount bracket (WV-Q122A*1).	M10 screws/ 4 pcs.	1470 N {330 lbf}

*1 For details on procedure for attaching mount bracket and camera, read the operating instructions of each mount bracket.

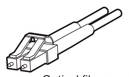
[2] Prepare an SFP (Small Form Factor Pluggable) module (locally procured).

For latest information about compatible SFP modules
<Control No.: C0504>

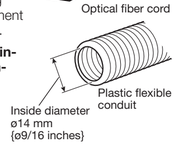
Note:
- Do not touch the metal terminal of the SFP module or bring an electrified object close to the terminal. Failure to observe this may cause malfunction due to static electricity.

[3] Prepare an optical fiber cord and a plastic flexible conduit.

① **Examine the necessary length of the optical fiber cord.**
- Check the position of the light termination box in which the optical fiber cable is laid.
- The necessary length of the optical fiber cord is calculated by adding the length between the light termination box and the camera attachment port of the mount bracket to approximately 240 mm {9-7/16 inches}.



② **Prepare an optical fiber cord with an LC duplex connector (Hereinafter referred to as "LC connector". Please be careful not to confuse with "LC removal clip type connector".) that connects between the SFP module and light termination box.**
Optical fiber cord: Use what is compatible with the SFP module in use.
Type of optical connector: LC connector (SFP module side)



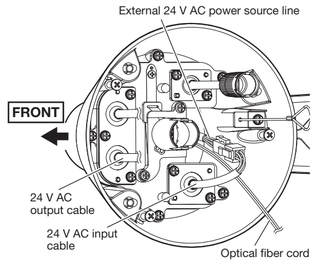
Note:
- Do not remove the protective cap on the tip until immediately before connection to the SFP module.

③ **Prepare a plastic flexible conduit equivalent to PF-14.**
The plastic flexible conduit protects the optical fiber cord from the light termination box to mount bracket.

IMPORTANT
- Hexagonal socket head special screws included with camera cannot be used. Use the special hexagon screws and locking washers included with this product.

[4] Connect the external power source connector to the connector of the 24 V AC input cable of this product.

① Connect between the connector of the external 24 V AC power source line and the 24 V AC input cable of this product.
② Apply waterproofing to the connector/cable parts with the waterproof tape (accessory).

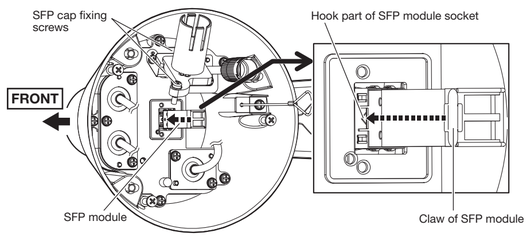


IMPORTANT
- The 24 V AC power supply shall be insulated from the commercial AC power.
- Stretch the tape by approx. twice and wind it around the connector and cable. Insufficient tape stretch causes insufficient waterproofing.

Note:
- This product is equipped with two cable connection terminals; one is "24 V AC input cable" that is connected to an external power source cable, and the other is "24 V AC output cable" that supplied the camera with power source. Be careful not to make improper connections.

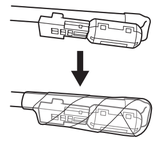
[5] Install the SFP module on this product.

① Loosen the SFP cap fixing screws (2 positions) with a screwdriver, and remove the SFP cap (transparent) from this product.
② Install the SFP module inside SFP module socket.



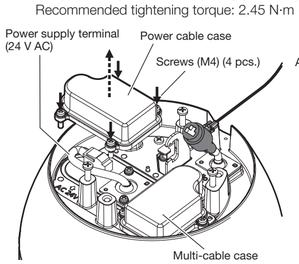
[8] Apply waterproofing to the 12 V DC output cable from this product.

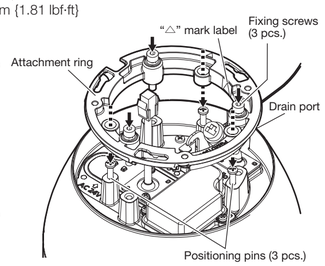
The 12 V DC output cable from this product is not used. Apply waterproofing to the connecting part with the waterproof tape (accessory).



[9] Mount the attachment ring (accessory) on the camera.

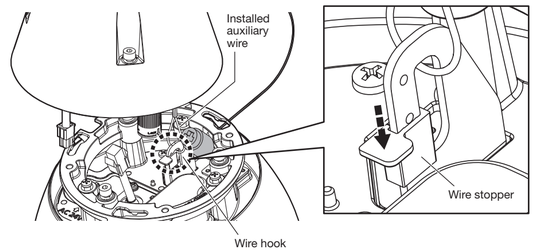
① Before performing the following tasks, store the camera in the packing box of this product to stand the camera. Refer to the figure of the packing box of this product.
② Remove the power cable case secured to the upper side of the camera with four screws (M4), and pull out the power supply terminal (24 V AC) stored inside. Dispose of the removed power cable case.
③ If the audio input cable, audio output cable, or alarm input/output cable, remove the multi-cable case, too.
④ Attach the attachment ring while facing the △ mark label to the rear of the camera (in a direction having the drain port) and fix the attachment ring to the upper side of the camera with the use of 5 mm {3/16 inch} hex wrench (locally procured).
Recommended tightening torque: 2.45 N·m {1.81 lbf·ft}





[10] Hang the camera on the installed auxiliary wire of this product.

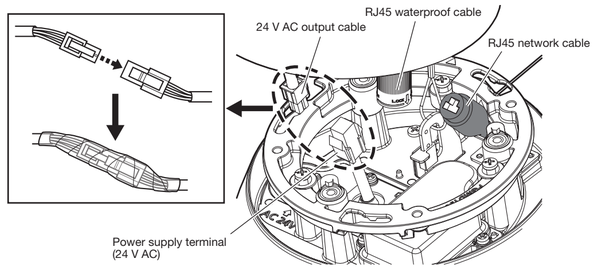
① Carry the camera to the installation position, and hang the camera on the installed auxiliary wire.
② Lower the wire stopper to prevent the installed auxiliary wire from coming off.



Note:
- The camera is not secured temporarily, and therefore, be careful not to let the camera hit surroundings.
- The installed auxiliary wire is designed to hang only the camera body. Do not put an excessive weight that the installed auxiliary wire cannot support.

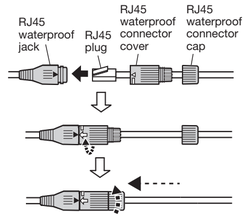
[11] Connect between the 24 V AC output cable of this product and the power supply terminal (24 V AC) of the camera.

Connect between the 24 V AC output cable of this product and the power supply terminal (24 V AC) of the camera, and apply waterproofing to the connection part and surrounding cable parts with the waterproof tape (accessory).



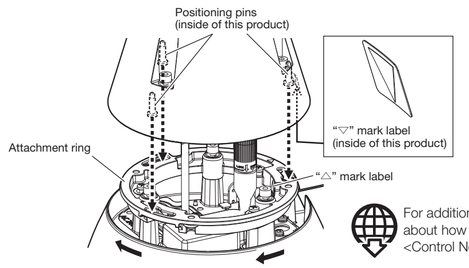
[12] Connect the RJ45 waterproof cable of this product to the RJ45 network cable of the camera.

① Loosen the RJ45 waterproof connector cap by rotating it counterclockwise and slide both the RJ45 waterproof connector cap and the RJ45 waterproof connector cover as shown in the illustration on the right.
② Insert the RJ45 plug into the RJ45 waterproof jack of the camera.
③ Engage the RJ45 waterproof connector cover with the RJ45 waterproof jack, and rotate the RJ45 waterproof connector cover to match the "⇦" mark to the counterpart.
④ Rotate the RJ45 waterproof connector cap until the gap between it and the RJ45 waterproof connector cover is eliminated.



[13] Fix the camera to this product.

① Adjust the camera position so that the "△" mark label at the back side of attachment ring is matched with the "▽" mark label at the rear inner side of this product.
② Insert the positioning pins of this product into the mounting holes (3 positions) in attachment ring at the upper part of the camera, and rotate the camera approximately 15 degrees counterclockwise in underneath view to fix it temporarily.



For additional information about how the internal wiring
<Control No.: C0506>

Note:
- When lifting the camera, do not hold the moving part.
- Put the installed auxiliary wire or other wire parts inside attachment ring to prevent them from being caught in the periphery of this product.
- Do not put the RJ45 waterproof connector part on the multi-cable case.
- Be careful not to apply a strong force to the optical fiber cord when inserting it in order to prevent the cord from being bent during the installation work.

[14] Tighten the three hexagonal socket head special screws (fixing screws) firmly with the use of a 4 mm {5/32} hex wrench (locally procured).

Recommended tightening torque: 2.45 N·m {1.81 lbf·ft}

[15] Fix the safety wire of the camera to the mount bracket.

Attach the safety wire of the camera body to the wire hook section of WV-Q122A.
Refer to the operating instructions for each mount bracket for further information about where to connect the safety wire.

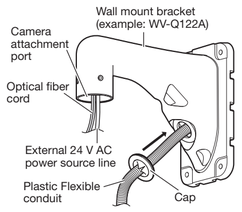
Note:
- If the safety wire is not long enough, connect the extended safety wire (accessory) to the snap hook of the safety wire.

Installation

Here explains an example of installation on a wall using wall mount bracket (WV-Q122A). For detailed installation information and procedure, refer to the operating instructions of each mount bracket.

[1] Fix WV-Q122A on the wall.

① Make four holes in the wall to fix WV-Q122A.
If wiring is laid from the back side of the wall, make a hole for wiring, too.
(For the positions of the holes, refer to the Operating Instructions for WV-Q122A.)
② Pass the optical fiber cord and the external 24 V AC power source line through the plastic flexible conduit in advance.
③ Assemble the connector part to the external 24 V AC power source line with the use of the 24 V AC power supply connector kit (camera accessory). For how to install the 24 V AC power supply connector kit, refer to "Making connections" in Installation Guide for the camera.
④ Insert the plastic flexible conduit in which the optical fiber cord and the external 24 V AC power source line are and laid into the wall mount bracket from the front side, and bring them in the conduit to the camera attachment port.
⑤ Adjust the length of each cord so that the distance from the camera attachment port as follows.
Optical fiber cord: approximately 240 mm {9-7/16 inches}
External 24 V AC power source line: approximately 200 mm {7-7/8 inches}
⑥ Apply waterproof treatment to the drilled installation surface and the cap of the mount bracket frontside.
⑦ Attach the wall mount bracket to wall surface using fixing screws (4 pcs.) (M10: locally procured).
Minimum pull-out strength (per 1 pc.) 1470 N {330 lbf}



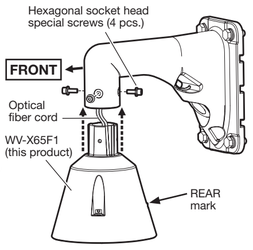
The illustration above indicates that the plastic flexible conduit is inserted from the front side of the mount bracket.

[2] Connect the optical fiber cord in the light termination box, connect the plastic flexible conduit in the light termination box, and apply waterproofing.

Connect the 24 V AC power source line that passes the plastic flexible conduit to the external power line separately.

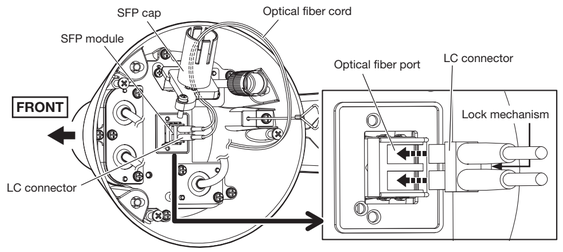
[3] Take out this product and fix it to WV-Q122A with the four hexagonal socket head special screws (M6, accessories).

① Pass the optical fiber cord and the external 24 V AC power source line into this product.
Pass other cables into this product if necessary.
② Adjust the direction of this product so that the "REAR" mark on the back side of this product faces toward the wall mount bracket side.
③ Fix this product to the wall mount bracket using a 4 mm {5/32} hex wrench (locally procured) with hexagonal socket head special screws (accessory) and locking washers (accessory).
Recommended tightening torque: 9.8 N·m {7.23 lbf·ft}
If two locking washers are released each other, be sure to mount them on the hexagonal socket head special screw in the direction shown in the illustration on the right side and use them.



[6] Connect the optical fiber cord to the SFP module.

① Pass the optical fiber cord through SFP cap, and push the LC connector of the optical fiber cord into the optical fiber port of the SFP module until the lock mechanism works.
② Put SFP cap back to the original position. Recommended tightening torque: 1.38 N·m {1.02 lbf·ft}



Note:
- The optical fiber port of the SFP module and the LC connector of the optical fiber cord have the protective cap, respectively. Remove the protective caps from them and connect them.
- When an optical fiber cord is connected to the SFP module, make sure that the connecting part of the optical fiber cord is not dirty.
- Do not bend or tie the optical cables. Set the minimum radius to 30 mm {1-3/16 inches} or more and conduct wire processing.

[7] Apply waterproofing to the optical fiber cord inserted in SFP cap.

① Pass the optical fiber cord into the two slits in SFP packing to mount SFP packing on the optical fiber cord.
② Insert SFP packing so that the side line on SFP packing is aligned with the tip of SFP cap.
③ Apply waterproofing to SFP cap and SFP packing by winding the waterproof tape (accessory) around them. Refer to the bottom right illustration for a part where the waterproof tape is to be applied. Be also sure to apply waterproof treatment with silicon waterproof material to the SFP packing where the optical fiber cord is inserted.