

1/2.8" Professional 3G/HD-SDI Camera

WAT-2200 Mk-2

Operation Manual

Thank you for purchasing the "1/2.8" Professional 3G/HD-SDI Camera **WAT-2200 Mk-2**" (referred to as the "product" or "camera" in this manual). This operation manual covers safety, functions, installation and the correct operating procedure for the camera. First, we ask you to read this operation manual thoroughly, then install and operate the product as advised. For future reference, we also advise safekeeping of this manual. If you do not understand the installation, operation or safety instructions expressed in this manual, please contact the distributor or dealer from where the camera was purchased. Not understanding the contents of the operation manual sufficiently may cause damage to the camera, personal belongings and/or result in injury. Watec is not responsible for any inconvenience or the attendant damages to the video and monitoring recording equipment caused by misuse, miss-operation or improper wiring of our equipment.

To Use This Product Safely

Watec cameras are designed to be used safely. If not used safely, it may lead to a physical accident caused by fire and electric shock. Therefore, please keep and read the "Cautions for safety" (P.2) for protection against accidents.

Guide to the Safety Symbols

**DANGER**

"DANGER" indicates a compulsory prohibition to prevent accidents.

**WARNING**

"Warning" may lead to a serious accident such as death or injury caused by fire or electric shock.

**CAUTION**

"Caution" may incur injury and cause damage to the camera and/or peripherals in the surroundings.

Power Supply

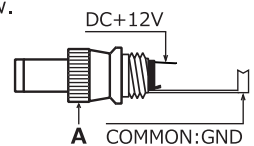
For the product, use a stabilized power adaptor designed for DC+12V with a current capacity of more than 250mA.

Use the supplied DC plug. When connecting a cable and connector correctly, follow the method below.

**WARNING****CAUTION**

The wiring of the connector must be exact. Be careful not to touch the other terminal while wiring.

Protect the wiring portion by using insulation tape or shrink tubing after wiring. To prevent inadvertent disconnection while in use, secure the connector to the power terminal on the camera by turning "A" of the figure to the right in the clockwise direction. Failure to observe the precautions above may result in damage to the camera, power adaptor and fire.



About EMC

The product is in conformity with EMC test standards carried out by authorized organizations in Japan.

FCC Part15 Class B

EN61000-6-3 / EN50130-4

*Please use an auxiliary power supply (eg: UPS) to the camera to comply with EN50130-4 of EMC standards.

**DANGER**

Do not modify the product. A modified camera may not conform to EMC test standards.

Cautions for Safety

Please read and understand the "Cautions for safety" below to ensure the correct use of the product.

DANGER

- **Do not disassemble and/or modify the camera.**
- **Do not operate the camera with wet hands.**

WARNING

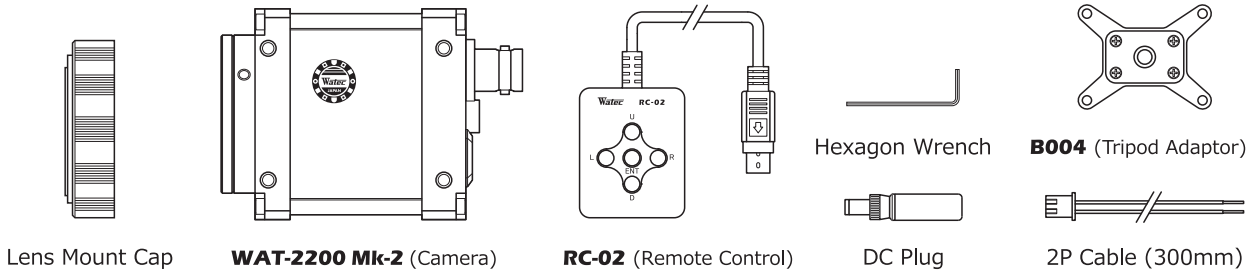
- **Use the camera within the range of the power supply voltage specifications**
The recommended voltage is DC+12V. Also, we advise the use of an "inline fuse" power line to protect the camera and peripheral equipment, where applicable.
- **Do not expose the camera to wetness or high moisture conditions.**
The camera is designed and approved for indoor use only.
The camera is not water-resistant or waterproof.
- **Protect the camera from condensation.**
Keep the camera dry at all times during storage and operation.
- **Should the camera not work properly, unplug the power immediately.**
Check the camera according to the "Problems and Trouble shooting" (P.5) section.

CAUTION

- **Avoid the striking of hard objects or dropping the camera.**
The camera use high quality electrical parts and precision components and may inadvertently be damaged if not cared for properly.
- **Do not connect any power supply directly to the video out terminal of the unit.**
Do not connect the camera with any monitor using a video/power single transmission terminal.
The camera utilizes HD-SDI output and is not designed for use with this type of equipment.
We advise you to read the operation manual of the monitor you use before any connections are made.
- **Do not install the camera in a position subject to direct sunlight.**
Sunlight shinning directly onto the camera lens can cause damage to the sensor.
- **Select a stable place for installation of the camera.**
Use an appropriately rated mount durable and strong for all installation position.
- **Turn off the power of the camera and peripherals when moving them and disconnect the all connecting cables.**
Before moving the camera, always remove any cables from the rear of the camera first.
Follow the procedure below to disconnect the cables.
 - 1) Remove the video cables connected to the camera.
 - 2) Remove the power cables connected to the camera.
- **Avoid using the camera near any strong electro-magnetic field.**
In the event of exposure to electromagnetic waves (causing the monitored image to become distorted) we recommend the camera be shielded by an appropriate protective casing.

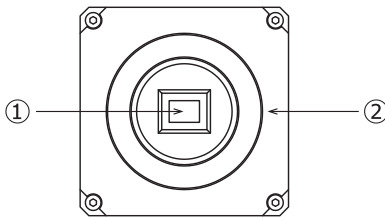
Contents

Referring to the illustration below, confirm all parts are present upon receipt of camera.



Description of Parts

Front



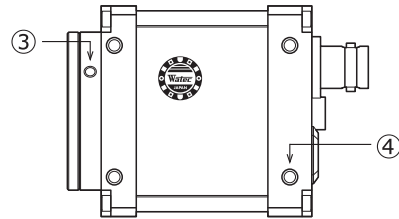
① IMAGE SENSOR / Sensor Window

The light receiving face of the image sensor. Dirt, water or oil deposits on the image sensor will cause an unclear picture on the monitor. Attach the lens cap to protect the lens and the sensor from contamination and damage.

② LENS MOUNT

Mount for the lens (CS-mount)

Side



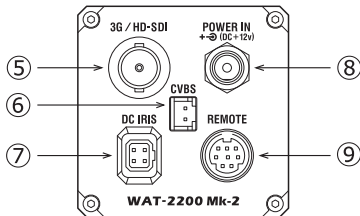
③ CS MOUNT SET SCREWS (BACK FOCUS)

3 adjustable hexagonal screws are placed at intervals of 120 degree around for focusing of the lens.
Use the supplied hexagon wrench for adjusting the back focus.

④ CAMERA MOUNTING (Bolt Size : M3, Depth: 4mm)

These mounting features are used to mount the camera.
If utilizing a tripod, use the supplied **B004** (tripod adaptor) by fixing the 4 bolt locations. 16 mounting features are on the sides, top and bottom of the camera.

Rear

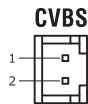


⑤ DIGITAL VIDEO OUT

The terminal for 3G/HD-SDI signal output.

⑥ ANALOG VIDEO OUT

The terminal for composite video signal output. Use the supplied 2P cable when you display analog video output.



Pin No.	Cable color	Function
1	Blue	VIDEO OUTPUT
2	Black	VIDEO GND (COMMON)

⑦ DC-IRIS SOCKET

This socket is for the DC auto-iris lens cable connector.

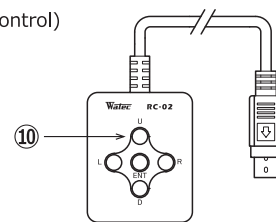
⑧ POWER IN Terminal (with a lock)

Connection for DC power plug to power the camera.

⑨ REMOTE CONTROL TERMINAL

The terminal designed for connection with the remote control for setting the function on the OSD menu.

RC-02 (Remote Control)



⑩ Remote Control Unit

Remote control unit providing access to adjustments, settings the functions on the OSD menu.

U=Up, D=Down, L=Left, R=Right, ENT=Enter

Set-up and Operation

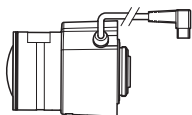
- 1) Ensure that the power to the camera and the peripheral equipment is turned off before making any connections.
- 2) Remove the lens mount cap from the camera and attach the CS-mount lens on “②LENS MOUNT” .
Use the option **34CMA-R** (C-mount adaptor) when a C-mount lens is used.
- 3) Connect the iris control cable to “⑦DC-IRIS SOCKET” on the camera when a DC auto-iris lens is being used.
- 4) Insert the power plug of the power adaptor into “⑧POWER IN” on the back panel of the camera.
- 5) Turn on the power to the camera, monitor and all other allied equipment.
- 6) Connect “⑤DIGITAL VIDEO OUT” on the camera with a monitor using a high frequency coaxial cable with 75Ω impedance.
*When the image cannot be obtained on the monitor, or a problem occurs, check and follow the procedure mentioned in the “Problems and Trouble Shooting” (P.5).
- 7) Adjust the focus and iris until optimal image clarity through the lens is achieved. If the picture is still out of focus, loosen “③CS MOUNT SET SCREWS” with the supplied hexagon wrench to move the lens forwards until a fully focused is obtained.

Lens Type	Operation
Manual Lens	Adjust the focus and iris to the best position on the lens.
Motorized Zoom Lens	Back focus is required via CS Mount. Adjust the iris level on the camera, then adjust the focus on the lens.
DC Auto-iris Lens	Set the DC iris operation setting on the OSD menu, then adjust the focus on the lens.

- 8) When detailed settings are required or a clear image is not obtained, connect the remote control to “⑨REMOTE CONTROL TERMINAL” , then set the functions on the OSD menu by “⑩OPERATION BUTTON” *Please connect the option **CB-03** (serial communication cable) to “⑨REMOTE CONTROL TERMINAL” to change the camera settings with the PC.

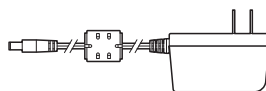
Options

This product exerts the optimum performance with our recommended options. Please take a look at our website and catalog introducing more options. Contact the distributor or dealer for purchase.



VARIOUS LENSES

We offer lenses maximizing the performance of the camera.



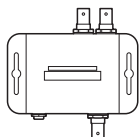
SW112-12-N-P5

A power supply adaptor (DC+12V) supporting the camera.



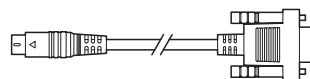
2.5CHD (BNC/BNC)

A coaxial cable supporting 3G-SDI available in 2.5m, 3m, 5m or 10m.



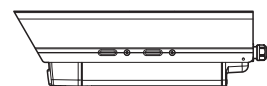
VPC-SH3STD

An HD-SDI converter for connecting the monitor with HDMI input.



CB-03

A serial communication cable to set the camera function with a PC.



VCHO-15S

Aluminum dripproof camera housing.
*IEC standard IPX5

Problems and Trouble Shooting

Trouble Shooting:

Disconnect the camera immediately should any of the following occur:

- An optimal picture cannot be obtained, after checking that all the cables and connections are correctly in place
- Smoke or any unusual odor emerges from the camera
- An object becomes embedded or a quantity of liquid seeps into the camera housing
- More than the recommended voltage and/or amperage has been applied to the camera by mistake
- Anything unusual occurring to any equipment connected to the camera

Required Action:

- 1) Turn off the main power supply to the camera.
- 2) Remove the video cables connected to the camera.
- 3) Remove the power cables connected to the camera.
- 4) Contact the distributor or dealer from which the camera was purchased.

After-sales Service

Warranty

All Watec products before being shipped to our customers are tested and inspected to ensure that our products are not faulty and are of the highest quality as directed by our Watec Quality-control System. Watec camera have a 3-year warranty, and the board camera units and peripherals have a 1-year warranty, provided that the products have been operated in accordance with our operation manual and have not been altered in any way.

Note: The Watec 3-year warranty does not cover image sensor repair or replacement caused by white blemish phenomena. For more details about the white blemish, please refer to the "After-sales Service" on our website or catalog.

Repair Service

Watec makes it a policy to repair Watec products first hand with the appropriate charge in accordance with the detailed defect information supplied by you. All repairs in the Watec workshop are quickly and precisely dealt with and returned after the shortest repair period possible.

Contact information

Design and specifications are subject to change without notice. If for any reason the camera does not work properly, or if you have any questions regarding installation or operation, contact the distributor or dealer from which the camera was purchased.

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