

OMRON

Model FZ-S2M

2 MEGA PIXEL DIGITAL MONOCHROME CAMERA FOR MODEL FZ VISUAL INSPECTION SYSTEM

INSTRUCTION SHEET

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.

Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.



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(2) Handling the Camera

Make sure to tighten all installation screws securely. The Camera's case is connected to the 0V line in the internal circuits. Observe the following precautions to prevent noise interference.

- Do not ground the Camera.
- Do not remove the base attached to the Camera.

(3) Others

- Do not use unspecified camera cable and a strobe controller other than those that specified in this manual with the FZ controller. Connection with unspecified camera cable and/or strobe controller may malfunction at the worst case.
- If you do not use the enhancing connector on the back of the camera, do not remove the cap that is attached to the connector.
- Do not attempt to dismantle, repair, or modify the main body.
- If you suspect an error or malfunction, stop using the Controller immediately, turn OFF the power supply, and consult your OMRON representative.
- Dispose of FZ-S2M components as industrial waste.

PRECAUTIONS FOR CORRECT USE

Please observe the following precautions to prevent failure to operate, malfunction, or undesirable effect.

(1) Connecting Cables

- Be sure to turn off the power before connecting or disconnecting the cables.

(2) Optical axis of the Camera

The center of the optical axis varies with the camera used. Therefore, when installing the camera, always check the center of the image displayed on the monitor.

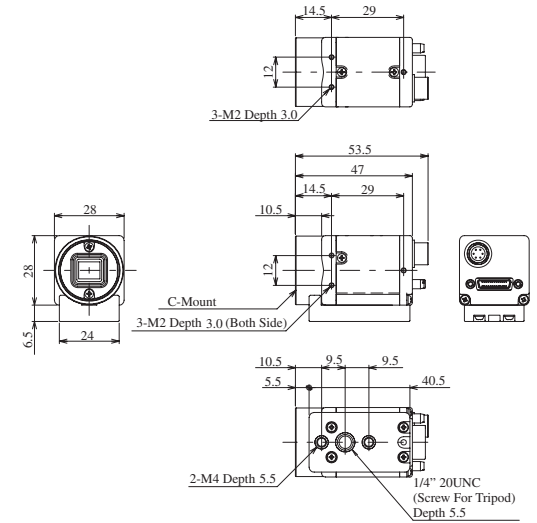
(3) Maintenance

- If large dust particles adhere to the CCD, use a blowerbrush (used to clean camera lenses) to blow them off. Do not blow the dust particles with your mouth.
- Do not use thinners, benzene, acetone, or kerosene to clean the Camera.

● Performance specifications

Item	FZ-S2M
Picture element	1/1.8-inch interline monochrome CCD (reading all pixels)
Effective pixels	1628(H) × 1236(V)
Pixel size	4.4(μm) × 4.4(μm)(Square pixel)
Scanning method	Non-interlace mode
Vertical frequency	30.633Hz
Horizontal frequency	39.352KHz
Pixel frequency	73.636MHz
Number of lines to be read	12 lines to 1200 lines
Synchronization	Internal Sync.
Video output	Digital (10 bits)
Gain	0dB to + 16dB
Shutter speed	1/10 to 1/50000s
Lens mounting	C mount

■ Dimensions



(Unit:mm)

PRECAUTIONS ON SAFETY

● Meaning of Alert Symbols



Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

● Alert statements



This product is not designed or rated for ensuring safety of persons. Do not use it for such purposes.



Burn injury may occasionally occur. Do not touch while operating and immediately after turn-off.



PRECAUTIONS FOR SAFE USE

Be sure to respect following items for safety.

(1) Installation Site

Do not install the product in locations subjected to the following conditions:

- Ambient temperature outside the rating
- Rapid temperature fluctuations (causing condensation)
- Relative humidity outside the range of 35 to 85%
- Presence of corrosive or flammable gases
- Presence of dust, salt, or metallic particles
- Direct vibration or shock
- Reflection of intense light (such as other laser beams or electric arc-welding machines)
- Direct sunlight or near heaters
- Water, oil, or chemical fumes or spray
- Strong magnetic or electric field
- Near high-voltage equipment or power equipment

■ Accessories

Main unit, instruction sheet(this manual)

■ Specifications

● General specifications

Item	FZ-S2M
Power consumption	4.0W max.(12V DC,0.34A max.)
Vibration resistance	10 to 150Hz: half-amplitude: 0.35mm: (maximum acceleration: 50m/s ²), 10 times each in X, Y, and Z directions for 8 min
Shock resistance	Shock resistance 150m/s ² ; 3 times each in 6 directions (up/down, left/right, forward/backward)
Ambient Temperature	Operating: 0 to 40 °C (with no icing nor condensation) Storage: -25 to 65 °C (with no icing nor condensation)
Ambient humidity	Operating and storage: 35% to 85% (with no condensation)
Ambient environment	No corrosive gases
Degree of protection	IEC60529 IP20 (in-panel)
Center positional accuracy of optical axis	X, Y : ±0.31mm θx, θy : ±2.1°
Materials	Cover :Galvanized steel sheet metal Case :Die-cast(ADC-12) Camera mounting base : PC / ABS
Weight	Approx. 76g (including base)

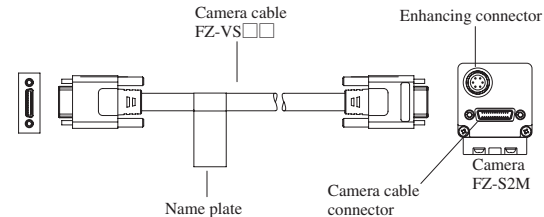
■ Changing the Camera Base Mount Position

- (1) The camera base attached to the bottom of the camera can also be attached to the another side of the camera. Remove the four screws(M2×7) from the base and re-attach the base to the another side of the camera.(Recommended screw tightening torque:0.32N·m)

If you attach the camera base to the top or side of the camera, attach with three screws.

■ Connecting

- (1) Using the Camera cable FZ-VS□□(sold separately), connect the connector on the back of the camera and the camera connector on Controller FZ series.



*The camera cable (FZ-VS,FZ-VSL,FZ-VSB) is polarized, so, make sure that the end bearing a name plate is connected to the Controller.

Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES. Please refer to separate catalogs for OMRON's safety rated products.

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used. Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM. See also Product catalog for Warranty and Limitation of Liability.

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