

OMRON

Model FZ-SLC100

INTELLIGENT CAMERA FOR 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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PRECAUTIONS ON SAFETY

● Meanings of Signal Words

⚠ WARNING

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.

⚠ CAUTION

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

● Alert statements

⚠ WARNING

To ensure safety, do not use this product for direct or indirect detection of data from human body. Do not use this product as a sensing device for the protection of the human body.

Since this product emits a visible light, that may have an adverse effect on the eyes. Do not stare directly into the light emitted from the LED. If the subject has a specular reflective surface, take care not to allow reflected light enter your eyes.

⚠ CAUTION

Beware of danger of burns. Do not touch the case while the LED is ON or immediately after the power is turned OFF, since it is extremely hot.

PRECAUTIONS FOR SAFE USE

Observe the following precautions to ensure safe use of the Camera.

1. Installation Conditions

- To ensure safety in operation and maintenance, do not install the Camera close to high-voltage equipment or power equipment.

- Do not use the product in environments where it may be exposed to inflammable gas.
 - Tighten all screws securely during installation.
2. Other Precautions
- 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 cause temperature rise and malfunctions at the worst case.
 - Do not attempt to disassemble, repair, or modify the Camera.
 - If you notice any abnormality in the Camera, stop using it immediately, turn OFF the power supply, and contact your OMRON sales representative.
 - When disposing of the Camera, dispose of it as industrial waste.

PRECAUTIONS FOR CORRECT USE

Observe the following precautions to prevent the product from malfunctioning, becoming inoperable, or the performance and/or the device from being adversely affected:

1. Cable

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

2. Optical axis

- The center of the optical axis may disperse by camera. When mounting a camera, always check the central position of video images with a monitor.
- The center of CCD and the optical axis of the lens are aligned to the direction of the camera at time of shipment. When the camera direction is changed, the gap of center of optical axis may become large.

3. Cleaning

- Do not use thinners, benzene, acetone, kerosene to clean the Camera.
- Wipe off stubborn stains carefully with a piece of soft cloth that has been wetted with a trace quantity of alcohol.

4. Static electricity

- White LEDs are used for the illumination. White LEDs are easily damaged by static electricity. A grounded wrist strap should thus be used when installing or conducting maintenance on the Camera.

5. Magnification

- To avoid collisions of inside lens, maximum value for magnification setting varies in relation to the focusing value. If magnification is not sufficient, adjust the working distance.

6. Other Precautions

- When the extension connector on the back of the camera is not in use, be sure to cover the connector with the attached cap.

Accessories

Main unit, instruction sheet (this manual) and hexagonal wrench

General specifications

Item	FZ-SLC100
Power consumption	14.4 W maximum. (12 VDC, 1.2 A maximum)
Vibration resistance	10 to 150 Hz, half-amplitude : 0.35 mm (maximum acceleration 50 m/s ²) 10 times for 8 minutes each in 3 directions
Shock resistance	150 m/s ² , 3 times each in 6 directions
Ambient Temperature	Operating : 0 to 50 °C (with no icing or condensation) Storage : -25 to 60 °C (with no icing or condensation)
Ambient humidity	Operating and storage : 35 to 85 % (with no condensation)
Ambient environment	No corrosive gases
Degree of protection	IEC60529 IP20
Material	Cover for camera : Galvanized steel sheet metal Case for camera : Aluminum alloy Case for lens : ABS Cover for illumination: Aluminum alloy Mount base : Aluminum alloy
Cable length	Maximum 5 m (when using optionally available FZ-VS)
Weight	Approx. 670 g (including base).

Performance specifications

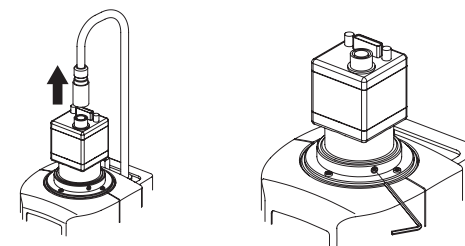
Item	FZ-SLC100		
Camera specifications	Picture element	1/3-inch interline color CCD (reading all pixels)	
	Effective pixels	659 (H) x 494 (V)	
	Pixel size	7.4 (μm) x 7.4 (μm)	
	Scanning method	Non-interlace mode	
	Vertical frequency	80.600Hz	
	Horizontal frequency	39.336KHz	
	Pixel frequency	30.682MHz	
	Number of lines to be read	12 lines to 480 lines	
	Synchronization	Internal synchronization	
	Video output	Digital, 10 bit	
	Gain	0dB to +13dB	
Lens	Shutter speed	1/120, 1/200, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/20000s	
	Operating system	Electrically driven magnification, focusing and iris	
	Zoom	Vari-focal	
	Range of view	13 to 100 mm, with tolerance +/- 5% maximum	
	Working distance	70 mm to 190 mm	
	Resolution	480 TV minimum	
	F value	Minimum: F2.8 (W-end) to F4.7 (T-end) Range of W-end : 2.8 to 8.0	
	Motor durability (One(1) time is equivalent to one (1) reciprocating motion)	Magnification and focusing: 10,000 times minimum Iris: 20,000 times minimum	
	Illumination	Light source	White LED (Wavelength: 400 nm to 700 nm)
		Lighting system	8-block lighting with variable illumination intensity
		Mean life	5,000 hours (Time required for the illumination intensity to drop to 50% of original level at shipment under constant lighting condition at maximum intensity with the ambient temperature of 25°C)
LED class *	Class 2		

* Applicable standard: IEC60825-1:1993 +A1:1997 +A2:2001
EN 60825-1:1994 +A1:2002 +A2:2001

When changing camera direction

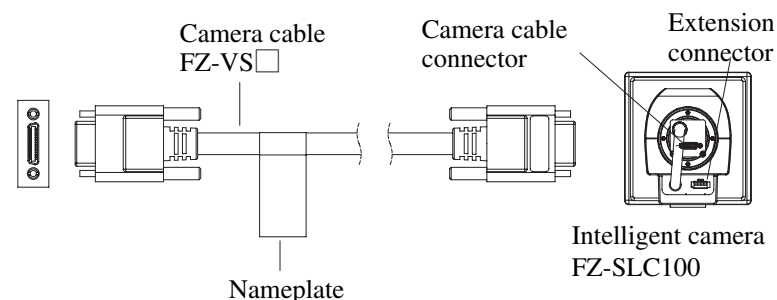
Make adjustment after disconnecting cable from the connector.

Loosen 3 screws located on the ring portion in the figure below using the attached hexagonal wrench. Turn the ring to adjust the direction. After adjustment, tighten the screws securely.



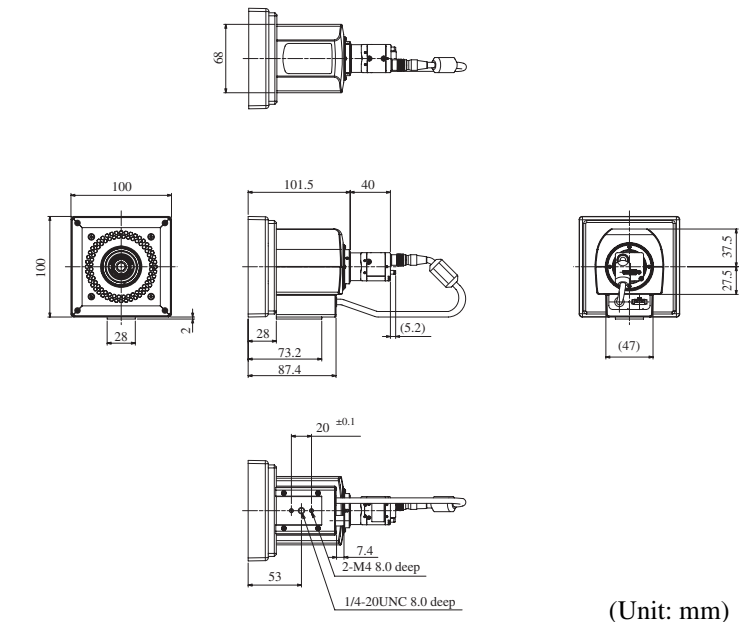
Connection

(1) Using the Camera cable FZ-VS, FZ-VSL, FZ-VSB (sold separately), connect the connector on the back of the camera and the camera connector on Controller FZ-3□□.



*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.

Dimensions



(Unit: mm)

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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