

OMRON

Model FZD-STC2M

3D Vision Camera for Model FZD
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.

TRACEABILITY INFORMATION:

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The Netherland

Manufacturer
Omron Corporation,
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Application Sensors Division
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Kyoto, 600-8530 JAPAN

NOTICE:

This product meets CISPR11 class A. The intended use of this product is in an industrial environment only.

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2.Handling the FZD-STC2M

- Make sure to tighten all installation screws.

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.
- Do not attempt to dismantle, repair, or modify the main body.
- If you drop or break the body, please consult our any branch offices.
- If you suspect an error or malfunction, stop using the Controller immediately, turn OFF the power supply, and consult your OMRON representative.
- Dispose of FZD-STC2M 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.
- The Camera's connector is connected to the 0V line in the internal circuits. Do not ground the metal parts of camera cables.
- Check the camera number for 3D vision camera and the controller, before connecting cables. If incorrect, do not prevent failure to operate malfunction, or undesirable effect. 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.

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 3D Vision Camera, 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 model FZD-STC2M.

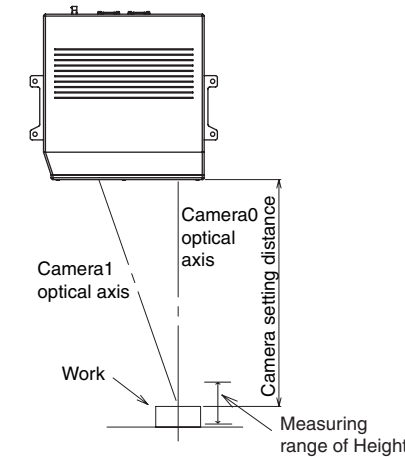
4.Handling of 3D Camera

- To maintain measurement accuracy, do not touch the camera during measurement.

●Performance Specifications

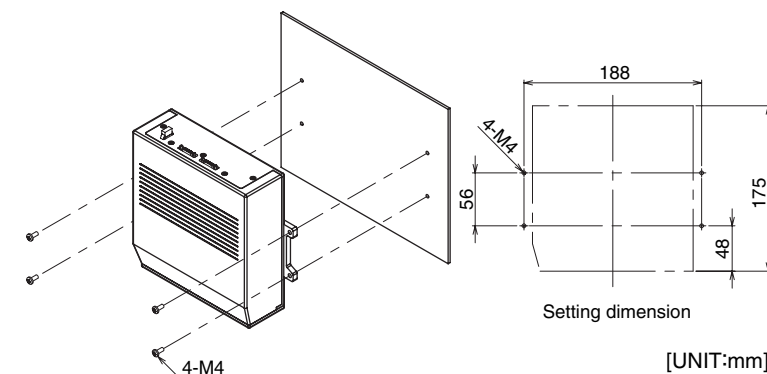
Item	Model	FZD-STC2M
Camera		
Number of camera pieces		2
Picture element		1/1.8-inch interline color CCD (reading all pixels)
Effective pixels		1628(H)×1236(V)
Pixel size		4.4(μm)×4.4(μm) (Square pixel)
Scanning method		Non-interlace mode
Vertical frequency		30.633Hz
Horizontal frequency		39.352KHz
Pixel frequency		73.636MHz
Number of lines to be read		12 lines to 1200 lines
Synchronization		Internal Sync
Video output		Digital (10bit)
Gain		0dB to +16dB
Shutter speed		1/10 to 1/50000s
Lens		
Aperture value		F2.8
Focal length		16mm

●Camera setting distance and Measuring range of height



■Setting

●Front Mounting

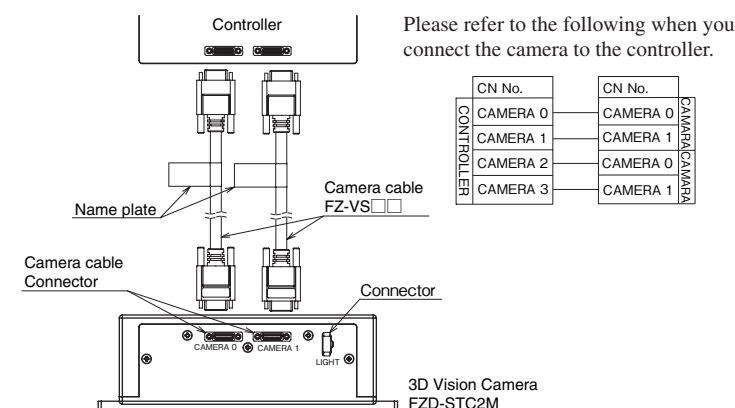


Tightening torque : 1.2N·m

※Do not set up body in any mounting hole other than the indicated above.

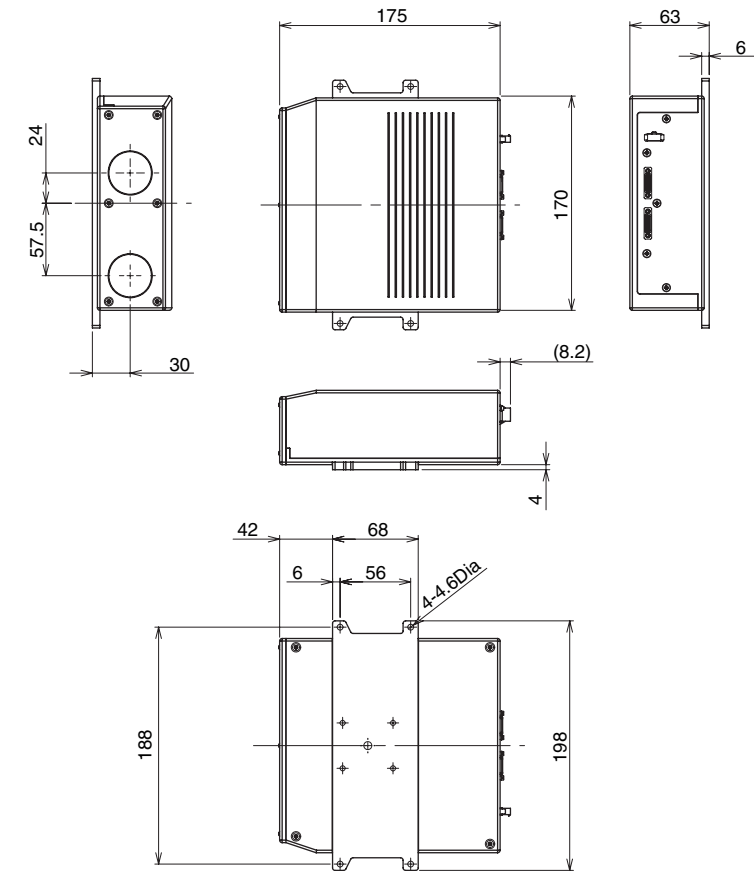
■Connecting

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

■Dimensions



[UNIT:mm]

PRECAUTIONS ON SAFETY

●Meaning 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.

●Meaning of Alert Symbols

Prohibition symbol Indicates general prohibitions for which there is no specific symbol.

●Alert Statements

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

Never disassemble or apply pressure that may deform or burn this product.

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%RH
- 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 sheet)

■Specifications

●General Specifications

Item	Model	FZD-STC2M
3D Vision Camera		
Camera setting distance		240mm
Measuring range of Height		±20mm
Field of view		84.8mm(*1)
XYZ measurement accuracy		±0.1mm(*2)
Power consumption		22W max. (12VDC 1.8A 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 Storage:−25 to 65°C (with no icing nor condensation)
Ambient humidity		Operating and Storage:35% to 85%RH (with no condensation)
Ambient environment		No corrosive gases
Degree of protection		IEC60529 IP20 (in-panel)
Material		Case:ABS/PC Mounting Base:Aluminum Glass Window:Fused Silica
Weight		Approx 1.3kg
Power Supply for Light Unit		
Output voltage		13V
Output current		Max 1.0A (1A Light unit is connected)
Output form		Strobe method
Exposure time		10,20,100,200μ sec x 255 step variable

*1.The lengthways view of the camera 0 / Tolerance ±5%, Setting distance is 240 mm

*2.It is the referential value in the same environment when we derived by 3D-calibration with our standard target.

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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