

<b>Panasonic®</b>	<b>Installation Instructions</b>
<b>Vision Sensor SV Series</b>	

Thank you very much for purchasing Panasonic products. Read these instructions carefully and carry out the installation in the prescribed manner. After installation, keep it in a safe place for reference when required.

<b>SAFETY PRECAUTIONS</b>	Observe the following notices to ensure personal safety or to prevent accidents.
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**⚠ Warning** If critical situations that could lead to user's death or serious injury is assumed by mishandling of the product.

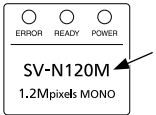
### Warning

- Always take precautions to ensure the overall safety of your system, so that the whole system remains safe in the event of failure of this product or other external factor.
- Do not use this product in areas with inflammable gas. (It could lead to an explosion.)
- Do not throw this product into the fire. (Electronic parts or other components could explode.)

- Do not touch the main unit directly while the power is ON or immediately after the power is turned OFF. There is a risk of burns as the main unit becomes very hot due to heat generated while the power is ON.
- To prevent excessive exothermic heat or smoke generation, use this product at the values less than the maximum of the characteristics and performance that are assured in these specifications.
- Do not dismantle or remodel the product. (It could lead to excessive exothermic heat or smoke generation.)
- Do not touch the terminal while turning ON electricity. (It could lead to an electric shock.)
- Use the external devices to function the emergency stop and interlock circuit.
- Connect the wires or connectors securely. (The loose connection could lead to excessive exothermic heat or smoke generation.)
- Do not allow foreign matters such as liquid, flammable materials, metals to go into the inside of the product. (It could lead to excessive exothermic heat or smoke generation.)
- Do not undertake construction (such as connection and disconnection) while the power supply is ON. (It could lead to an electric shock.)
- Do not bend the cables forcibly, place a heavy object on them or bring them close to a thermal appliance. (It could lead to an electric shock or smoke generation.)
- This product has been developed / produced for industrial use only.

- **Checking the model name**  
Before using this product, check the model name shown on the top of the main unit.

Model name	Type	Model name	Type
<b>SV-N120M</b>	1.2M mono	<b>SV-N120C</b>	1.2M color
<b>SV-N300M</b>	3.0M mono	<b>SV-N300C</b>	3.0M color
<b>SV-N500M</b>	5.0M mono	<b>SV-N500C</b>	5.0M color



□ Main unit	1 pc.
□ Protection cap	1 pc.
□ Adapter rings [ t = 0.5mm: 1 pc., t = 1mm: 2 pcs.]	1 set
□ Insulated pedestal base	1 pc.
□ Insulated pedestal base mounting screw [M3 (length: 8mm)]	4 pcs.
□ Installation Instructions (Japanese / English, Chinese)	1 pc. each
□ General Information for Safety, Compliance, and Instructions (23 languages)	1 pc.

Item	Specifications
Operating ambient temperature	0 to +45°C
Operating ambient humidity	35 to 85% RH (at +25°C, non-condensing or freezing)
Pollution degree	Pollution degree 2
Operating altitude	2,000m above sea level or lower
Overvoltage category	I

- Locations where sudden temperature changes cause condensation
- Locations exposed to an atmosphere containing corrosive gases or flammable gases
- Locations exposed to dust, soot, conductive dust, or salt
- Locations or their atmosphere where there is a danger of exposure to benzene, paint thinner, alcohol, or other organic solvents or strong alkaline substances such as ammonia or caustic soda
- Locations where there is a danger of exposure to water, oil, chemicals, or other similar substances
- Locations exposed to excessive vibration or shock
- Locations near power transmission lines, high-voltage equipment, power cables, power equipment, radio transmitters, or any other equipment that generates high switching surges
- Locations exposed to direct sunlight
- Outdoor

- **Power supply**
- For the power supply for operating the main unit, use an insulated DC power supply with a power supply capacity of 3A or more and with a built-in protection circuit. Furthermore, separate the power supply system from the power supplies for power equipment and other equipment.
- The supply voltage to the main unit must be between 21.6 and 26.4V DC. However, if a power supply (output) for LED lighting for the main unit is used, the supply voltage must be between 22.8 and 26.4V DC.
- The power supply must be turned ON and OFF on the primary (AC input) side. If the power supply is turned ON and OFF on the secondary (24V DC) side, there is a risk that the fuse inside the main unit may blow.
- If a momentary power failure occurs, the main unit may malfunction.

- If positive grounding is used for the equipment, check the following precautions:
  - For the **SV** series vision sensors, do not use positive grounding (see ① in the diagram below).
  - The shell part of the Ethernet connector is connected to signal ground (0V) inside the **SV** series vision sensor. If an **SV** series vision sensor is used in a positive grounding environment, the power supply (24V DC) will be shorted via the ground terminal of the PC or PLC, resulting in a malfunction.
- The enclosure of the **SV** series vision sensor is connected to signal ground (0V).
  - To insulate the sensor from the mounting surface of the equipment, install the sensor with the insulated pedestal base provided (see ② in the diagram below).

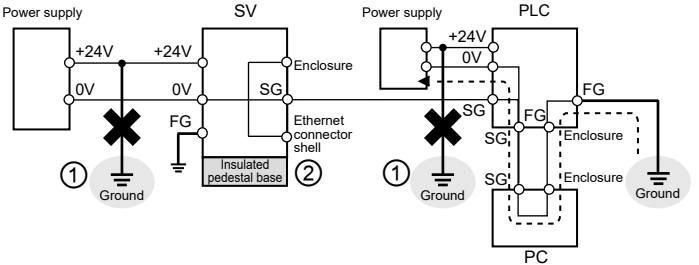
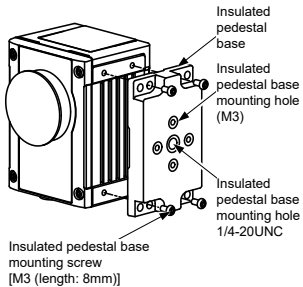


Figure 1 shows the front view of the printer. The control panel features three status indicators labeled 1, 2, and 3: 'ERROR', 'READY', and 'POWER'. Below these indicators is a large rectangular display area. To the right of the display, there are two circular ports labeled 4 and 5, and a rectangular port labeled 6.

No.	Description	No.	Description
<b>1</b>	ERROR indicator (Red)	<b>4</b>	Power I/O cable connector
<b>2</b>	READY indicator (Green)	<b>5</b>	Power connector for LED lighting (24V, 10W)
<b>3</b>	POWER indicator (Green)	<b>6</b>	Ethernet port (RJ45)

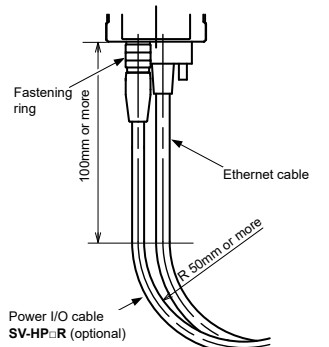
- To allow heat radiation, leave a sufficient distance between the main unit and other devices or wiring ducts.
- Do not install the main unit immediately above devices that generate large amounts of heat, such as heaters, transformers, or high-capacity resistors.
- If the main unit is installed in the following environments, be sure to electrically insulate the unit from other devices when mounting it. Use the insulated pedestal base provided.
  - When there is a difference in electric potential between the main unit and the equipment
  - When positive grounding is used for the equipment (if the main unit is not insulated, the line between +24V and the ground terminal will be shorted.)
- Captured images may be inclined, depending on the position or inclination accuracy of the vision sensor, the dimensional error of the mounting section, or other related factors at the time of installation. In such a case, make adjustments in the main unit mounting section or other related sections.
- If vibration is assumed to be transmitted to the main unit and the cable, secure the cable near the main unit so that the cable and the main unit are subject to the same level of vibration, and mount the main unit so that the connector does not shake.

1. Mount the insulated pedestal base on either of both sides or the back of the main unit. Firmly secure the insulated pedestal base with the M3 mounting screws (length: 8mm) provided with the insulated pedestal base. Tighten the screws to a torque of  $0.5\text{N}\cdot\text{m}$  or less.
2. Use the insulated pedestal base mounting holes to mount the base on the equipment, and firmly secure the base with four M3 screws or one 1/4-20UNC screw. To prevent the screws from coming into contact with the main unit, the depth of screw insertion into the insulated pedestal base mounting hole must be no more than 5mm for the M3 screw or no more than 8mm for the 1/4-20UNC screw.



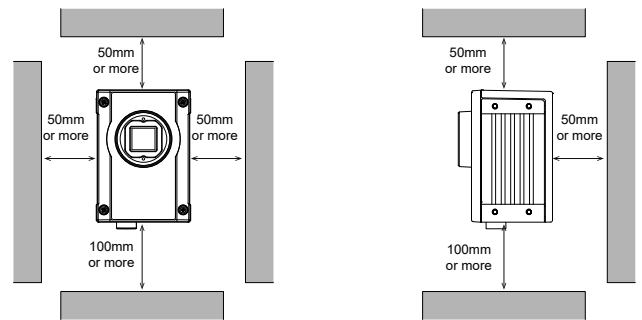
- Firmly tighten the fastening ring of the connector for the Power I/O cable **SV-HP□R** (optional).
- Perform wiring so that no load or burden is imposed on the cable connectors.
- Do not bend the cable within 100mm from the root of the connector. The bend radius of the cable must be at least 50mm.

The diagram illustrates the correct wiring method for the Power I/O cable connector. It shows a cross-section of the connector with a fastening ring. A vertical arrow indicates a distance of 100mm or more from the connector root to the start of the bend. Labels include 'Fastening ring', '100mm or more', and 'Ethernet cable'.



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- When the insulated pedestal base is mounted on the side



- For the Power I/O cable to be connected to the main unit, use the **SV-HP0R** (optional) product designated by Panasonic. If you use any other product, the warranty shall not be applicable, regardless of whether problems such as failure, damage, or destruction occur.
- Before performing wiring work or connecting or disconnecting the connector, be sure to turn OFF the power to the main unit.

Cable color	Function	Description		
Brown	+24V DC	Power supply		
Blue	GND (0V)			
Green	F.G.	Functional ground		
Purple	RS-232C-RD	RS-232C		
Orange	RS-232C-SD			
White	IN 0	Input data IN0 to IN3		
Printed mark	-		IN 1	
	--		IN 2	
	---		IN 3	
	----		TRG-IN	Trigger input
	-----		TRG-COM	Trigger input COM
Black	OUT 0 READY	READY output		
Red	OUT 1 ERROR	ERROR output		
Yellow	OUT 2	Output data OUT 2 and OUT 3		
Gray	OUT 3			

- |   | Function        |
|---|-----------------|
| 1 | Output + (+24V) |
| 2 | N.C.            |
| 3 | Output -        |

- This connector can be used to connect LED lighting with a supply voltage of 24V DC and a rated power of 10W or less.
- The power supply for LED lighting can be used only when a Power I/O cable with a length of 10m or less is connected.
- For details on how to use the power connector for LED lighting, refer to the **"SV Series User's Manual"** (our Website: <https://panasonic.net/id/pidsx/global>).

Power I/O cable model number	Cable length
<b>SV-HP03R</b>	3m
<b>SV-HP05R</b>	5m
<b>SV-HP10R</b>	10m
<b>SV-HP20R</b>	20m

Technical drawing of the C-mount showing three views: front, side, and top. The front view shows a square body with a central circular lens area. Dimensions include a total width of 50, a lens diameter of 44, and a mounting flange width of 3.5. The side view shows a total height of 70, a lens height of 56, and a mounting flange height of 3.5. The top view shows a total width of 50, a lens width of 43, and a mounting flange width of 3.5. The drawing also indicates 4-M3 (depth: 3) screws on both sides of the lens.

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- Technical drawing of the 1000 Series Temperature and Humidity Chamber showing front, side, and top views with dimensions.
- Front View Dimensions:**
- Overall Width: 300
  - Overall Height: 70
  - Mounting Flange Width: 43
  - Mounting Flange Thickness: 7
  - Internal Chamber Height: 44
  - Feature: C-mount
- Side View Dimensions:**
- Overall Depth: 10
  - Feature: Insulated pedestal base
- Top View Dimensions:**
- Overall Width: 90
  - Overall Depth: 20
  - Mounting Hole Diameter: 4-M3 (depth: 6)
  - Through-hole Diameter: 1/4-20UNC (Through-hole)
  - Internal Spacing: 10.5

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- This product uses software including open source software. Regarding the license of the open source software, refer to the following URL.  
<https://www3.panasonic.biz/ac/e/fasys/vision/index.jsp>

- This product complies with the EMC Directive (2014/30/EU) / EMC Regulation (2016/1091): EN 61000-6-4, EN 61000-6-2

<https://panasonic.net/id/pidsx/global>

Please visit our website for inquiries and about our sales network.

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