

Thank you for choosing our Autonics product.

Read and understand the instruction manual and manual thoroughly before using the product.

For your safety, read and follow the below safety considerations before using.

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

Keep this instruction manual in a place where you can find easily.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Follow Autonics website for the latest information.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime / disaster prevention devices, etc.)

Failure to follow this instruction may result in personal injury, economic loss or fire.

02. Do not use the unit in the place where flammable / explosive / corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.

Failure to follow this instruction may result in explosion or fire.

03. Do not use this product for protecting human body or part of body.

04. Do not connect, repair, or inspect the unit while connected to a power source.

Failure to follow this instruction may result in fire.

05. Check 'Connections' before wiring.

Failure to follow this instruction may result in fire.

06. Do not disassemble or modify the unit.

Failure to follow this instruction may result in fire.

⚠ Caution Failure to follow instructions may result in injury or product damage.

01. Use the unit within the rated specifications.

Failure to follow this instruction may result in fire or product damage.

02. Use a dry cloth to clean the unit, and do not use water or organic solvent.

Failure to follow this instruction may result in fire.

03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.

Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- The image sensor in the product is vulnerable to heat, humidity and shock.
- Due to risks of product failure, do not move or transport the product by ship.
- Use or store the product within the rated environment specifications.

Failure to follow this instruction may result in product damage or malfunction.

- Power supply should be Class 2, SELV power supply device.

(UL certified, rated: 24 VDC \equiv , 1.2 A min.)

- Prevent VCC wire from short to other wires in power I/O cable.

- In order to avoid malfunction from static electricity or noise, ground shield wire of the power I/O cable.

- Do not disconnect the power supply while setting operation or saving set information.

It may cause data loss

- Do not disconnect the power supply while updating firmware. Failure to follow this instruction may result in product damage.

- Keep optical section of the sensor away from the contact with water, dust and oil. It may cause malfunction.

- When not in use for a long time, disconnect and store the power cable.

- When connecting network, connection must be operated by technical expert.

- In the following case, disconnect the power supply immediately. Failure to follow this instruction may result in fire or product damage.

- When water or foreign substances is detected in the product

- When the product is dropped or case is damaged

- When smoke or smell is detected from the product

- Do not use the product in the place where strong magnetic field or electric noise is generated.

- This unit is intended to be used in the following environments.

- Indoors (in the environment condition rated in 'Specifications')

- Altitude max. 2,000 m

- Pollution degree 2

- Installation category II

Product Components

- Product
- Instruction manual
- Ethernet connector Cap (screw plug - waterproof) × 1

Sold Separately

- Power I/O cable: CIDM8-□-A (I type), CLDM8-□-A (L type)
- Ethernet cable: C1(M)8-□PR-A (I type), C4(M)8-□PR-A (L type)
- Waterproof lens cover: HL-□-VC

Software

Download the installation file and the manuals from the Autonics website.

■ atVision

The program allows setting of smart camera parameters and management of monitoring data such as inspection status and status information.

Item	Minimum requirements
CPU	Intel i3, Ryzen 3 or above
OS	Microsoft Windows 7 (×64) or higher
RAM	6 GB or higher
Storage ⁽¹⁾	at least 10 GB of available HDD space
Resolution ⁽²⁾	1280×800 or higher (1920×1080 recommended)
Others	RJ45 Ethernet port, GigE network interface card

01) Additional HDD space may be required depending on the number of inspections.

02) This software is optimized for 1920×1080 resolution and 100% magnification.

Network Setting

- Configure the network settings of vision sensor via atVision.
- For initial IP address, refer to the table as below.

IP address	192.168.0.2
Subnet mask	255.255.255.0
Gateway	192.168.0.1

Connections

■ Power I/O connector wiring (M12 8-pin plug type connector)

- When the power is unstable, ground the shield of the provided cable.

Pin	Color	Signal	Function
1	White	HS OUT 0	Strobe OUT
2	Brown	VCC	Power input
3	Green	TRIG +	Trigger input +
4	Yellow	TRIG -	Trigger input -
5	Gray	RS232 RX	RS232 receive
6	Pink	RS232 TX	RS232 transmit
7	Blue	GND	Ground
8	Red	HS OUT 1	Select 1 from inspection complete, inspection result output (PASS / FAIL), alarm



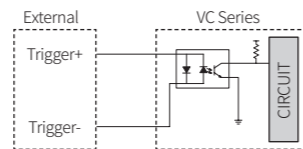
■ Ethernet connector wiring (M12 8-pin socket type / RJ45 connector)

M12 8-pin	Color	RJ45	Signal
1	White / Blue	5	BI_DC-
2	White / Brown	7	BI_DD+
3	Brown	8	BI_DD-
4	Orange	2	BI_DA-
5	White / Green	3	BI_DB+
6	White / Orange	1	BI_DA+
7	Blue	4	BI_DC+
8	Green	6	BI_DB-

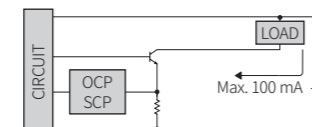


Inner Circuit

■ Trigger (TRIG) input

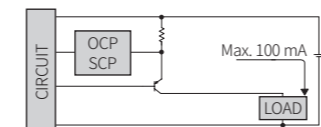


■ NPN open collector output



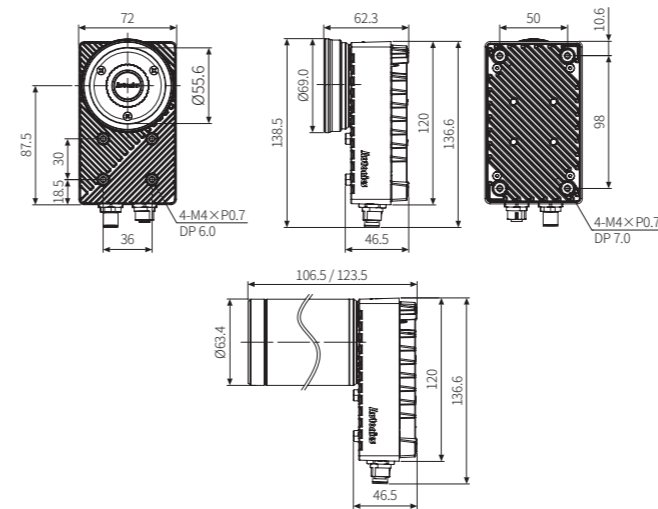
- OCP (over current protection), SCP (short circuit protection)
- If short-circuit the control output terminal or supply current over the rated specification, normal control signal is not output due to the output short over current protection circuit.

■ PNP open collector output

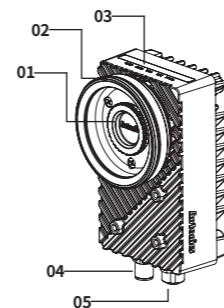


Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.



Unit Descriptions

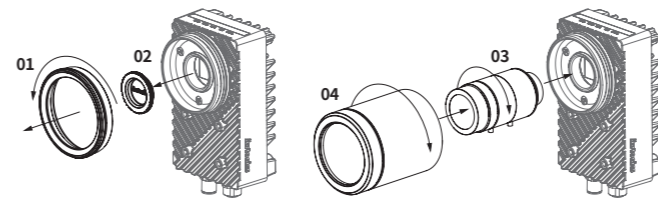


- Sensor protective cap
- Housing bushing cover
- Status LED indicator
- Power I/O connector
- Ethernet connector

■ Indicator

Indicator	Name	Function
POWER	Power indicator (green)	Turns ON when power is supplied.
LINK	Ethernet connection indicator (green)	Turns ON when vision sensor is connected with PC (Ethernet communication).
DATA	Data transmit indicator (green)	Flashes when data is transmitted between smart camera and PC.
USER 1	User setting indicator (green / red)	Turns ON or flashes in operation of inspection complete, inspection result (PASS, FAIL), alarm, camera work
USER 2	User setting indicator (green / red)	Turns ON or flashes in operation of inspection complete, inspection result (PASS, FAIL), alarm, camera work

Waterproof Lens Cover Assembly



- Remove the housing bushing cover by rotating CCW direction.
- Remove the sensor protective cap.
- Tighten the C-mount lens by rotating CW direction.
- Tighten firmly the waterproof lens cover by rotating CW direction until there is no gap.

Specifications

Model	VC-M50T-CE
Image element	1 inch mono CMOS
Resolution	5 MP (2,560 × 2,048)
Frame per second	16 fps
Bit Depth	8 bit (256 gray level)
Shutter	Global shutter
Exposure time	3 μs to 3 sec
Lens type	C-Mount
eMMC	8 GB
DDR4	2 GB (LPDDR4), 512 MB (DDR4)
Inspection work group	64 (simultaneous inspection: 32)
Trigger mode	Continuous, External Trigger, Manual, Ethernet, RS232
Communication	Ethernet (TCP/IP & Modbus, 10/100/1000Base-T), RS232C
FTP trans. output	YES
Indicator	Power, LINK, DATA, USER 1, USER 2
Approval	CE, RoHS
Unit weight (packaged)	≈ 600 g (≈ 780 g)

Power supply	24 VDC \equiv ±10%
Current consumption	≤ 1 A
Rated input signal	24 VDC \equiv ±10%
Output signal	NPN-PNP open collector output setting (software)
HS OUT 0	Strobe OUT
HS OUT 1	Inspection complete, Inspection result output (PASS / FAIL), Alarm, Camera work
Load voltage	24 VDC \equiv
Load current	≤ 100 mA
Residual voltage	≤ 2.5 VDC \equiv
Protection circuit	Output short overcurrent protection circuit, reverse voltage polarity protection circuit
Vibration	1.5 mm double amplitude at frequency 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 2 hours
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Ambient temp.	0 to 45 °C, storage: -30 to 80 °C (no freezing or condensation)
Ambient humi.	0 to 95%RH, storage: 0 to 95%RH (no freezing or condensation)
Protection structure	IP67 (IEC standard / When mounting waterproof lens cover)
Connection	Connector type
Connector spec.	Power I/O: M12 8-pin, Ethernet: M12 8-pin / RJ45 (cable tightening torque: 0.4 N m)
Material	Die-cast Aluminum Housing
Components	Ethernet connector Cap (screw plug - waterproof) × 1 (tightening torque: 0.4 N m)

Troubleshooting

Please check routinely whether VC is operating in normal status or not. For more information, refer to atVision software manual.

Symptom	Troubleshooting
When supplying power, POWER LED is not turned ON.	<ul style="list-style-type: none"> Check the status of power supplying and power cable are connected properly. Check the power is supplied within the rated range. Check the polarity of power is connected properly. Check the power terminal is tightened thoroughly.
Work is failed due to the external input error.	<ul style="list-style-type: none"> Check whether status of input COMMON or each of input wire is connected properly. Check whether the problem occurs in input device work. Check the output wire is connected properly.
Work is failed due to the external output error.	<ul style="list-style-type: none"> Check the power to output is supplied within the rated range. Check whether the problem occurs in output device work. Check the specifications of load connected to output is within the rated range.
Unable to connect Ethernet communication.	<ul style="list-style-type: none"> Check LINK LED is turned ON. If not, check wiring. Check the communication (IP address, subnet mask and gateway) is set correctly. Check the connection or specification of the communication cable is corresponding to Autonics Guide. Use the cable distributed by Autonics. (sold separately)