

0.4M Monochrome/Color Vision Sensor (Internal illumination)



VG Series CATALOG

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

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

Features

- Vision sensors with integrated LED lighting
- Global shutter method for accurate image capturing with minimal motion blur
- Enhanced optical performance with light interference prevention technology
- Tight lens cover attachment allows application in environments with dust or shock
- Various inspection functions
- Inspection simulator function
- Set up to 32 separate work group (64 inspection points per work group)
- Save data to FTP servers
- Free vision sensor software included (Vision Master) : inspection simulator function, manage parameters and work group, inspection results monitoring, send data to FTP, multilingual support, etc.
- IP67 protection structure (IEC standard)

Ordering Information

This is only for reference.

For selecting the specific model, follow the Autonics web site.

VG - ① 04 ② - ③ E

① Image element

M: Mono CMOS

C: Color CMOS

③ Effective focal length

Number: Effective focal length (unit: mm)

② Color of light

W: White

R: Red

G: Green

B: Blue

Product Components

- VG body × 1, Built-in light × 1
- Instruction manual
- Bracket A (BK-VG-A) × 1
- Mounting screw × 2
- Assembly tool (ASST-VG) × 1

Software

Visit Autonics web site to download software and software manual.

• Vision Master

Vision Master is the vision sensor program that allows setting of vision sensor parameters and management of monitoring data such as inspection status and status information.

Item	Minimum specifications
System	32bit (×86) or 64bit (×64) processor over 1GHz
Operations	Microsoft Windows 7/8/10
Memory	1GB +
Hard disk	400MB+ of available hard disk space
VGA	Resolution: 1024×768 or higher
Others	RJ45 Ethernet port

Vision Master

For more information, refer to the Vision Master software manual.

■ Basic


- Device selecting and network setting
- Camera setting
- Input/Output setting
- Work group setting
- Inspection setting

■ Inspection function

The supported functions are varied by the image element of VG.

Function	Description
Alignment	To align position and orientation of the target based on the registered target
Brightness	To inspect average brightness of the target
Contrast	To inspect average contrast of the target
Area	To inspect area of the target
Shape comparison	To inspect shape of the target
Edge	To inspect the presence of the edge
Length	To inspect the length between two edges
Angle	To inspect the angle between two edges
Diameter	To inspect diameter of the circle
Object counting	To count the number of the object
Color identification	To inspect average color of the object
Area of color	To inspect area in a certain color
Object of color counting	To count the number of objects in a certain color

Specifications

Model	VG-M04□-□E			VG-C04□-□E		
Effective focal length	8 mm	16 mm	25 mm	8 mm	16 mm	25 mm
Min. working distance	50 mm	100 mm	200 mm	50 mm	100 mm	200 mm
Image filter	Preprocessing, external filter (color filter, polarizing filter)					
Image element	1/3 inch mono CMOS			1/3 inch color CMOS		
Resolution	752 × 480 pixel					
Image snap camera frame per second	≤ 60 fps ⁰¹⁾					
Shutter	Global shutter					
Exposure time	20 to 50,000 μs					
Inspection work group	32 (simultaneous inspection: 64)					
Inspection camera frame per second	≤ 60 fps ⁰¹⁾					
Dedicated software	Vision Master					
Light ON/OFF method	Pulse					
Light color	White / Red / Green / Blue model ⁰²⁾					
Trigger mode	External - Internal - Free run setting (software)					
Communication	Ethernet(TCP/IP), 100BASE-TX/10BASE-T					
FTP trans. output	YES					
Indicators	POWER (green), LINK (green), PASS (green), DATA (orange), FAIL (red)					
Approval	CE  ENEC					
Unit weight (package)	≈ 273 g (≈ 415 g)	≈ 274 g (≈ 416 g)	≈ 274 g (≈ 416 g)	≈ 273 g (≈ 415 g)	≈ 274 g (≈ 416 g)	≈ 274 g (≈ 416 g)

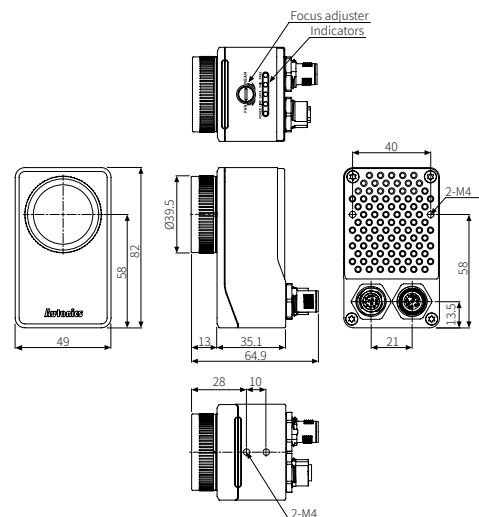
01) The number of camera frames per second can be different by image setting or inspection item.

02) Available to buy separately and replace.

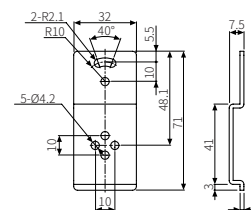
Power supply	24 VDC= ±10%
Current consumption	1 A
Rated input signal	24 VDC= ±10%
Output signal	NPN-PNP open collector output setting (software)
Load voltage	24 VDC=
Load current	≤ 50 mA
Residual voltage	≤ 1.5 VDC=
Protection circuit	Output short over current protection circuit
Insulation resistance	≥ 20MΩ (500 VDC= megger)
Dielectric strength	500 VAC~ 50/60 Hz for 1 min.
Vibration	1.5 mm amplitude at frequency of 10 to 55 Hz (for 1 min) 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 temperature	0 to 45 °C, storage: -20 to 70 °C (non-freezing or non-condensation)
Ambient humidity	35 to 85%RH, storage: 35 to 85%RH (non-freezing or non-condensation)
Protection structure	IP67 (IEC standards)
Connection	Connector type
Connector	Power I/O: M12 12-pin, Ethernet: M12 8-pin-RJ45
Material	Case: AL, lens cover: PC, focus adjuster: SUS, cable: PUR

Dimensions

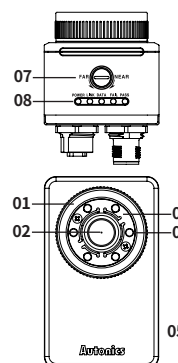
- Unit: mm, For the detailed drawings, follow the Autonic web site.



Bracket A (BK-VG-A)



Parts Descriptions



- 01. Lens cover
- 02. Lens
- 03. Light cover
- 04. LED light
- 05. Power I/O connector
- 06. Ethernet connector
- 07. Focus adjuster
- 08. Indicators

Indicators

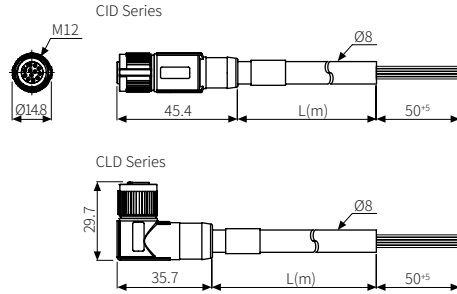
Mark	Name	Function
POWER	Power indicator (green)	Turns ON when power is supplied.
LINK	Ethernet connection indicator (green)	Turns ON when vision sensor is connected with PC (Ethernet communication).
DATA	Data transmission indicator (orange)	Flashes when data is transmitted from vision sensor to PC.
FAIL	Failure indicator (red)	Flashes when detects failure during work group inspection.
PASS	Pass indicator (green)	Flashes when passed inspection during work group inspection.

Sold Separately

- Power I/O cable (CID-□-VG, CLD-□-VG)
- Ethernet cable (CIR-□-VG, CLR-□-VG)
- Light (LR-□-06-VG), Color filter (FL-□-VG), Polarizing filter (FL-□-VG)
- Connector protection cover (P96-M12-1)
- Bracket B (BK-VG-B)

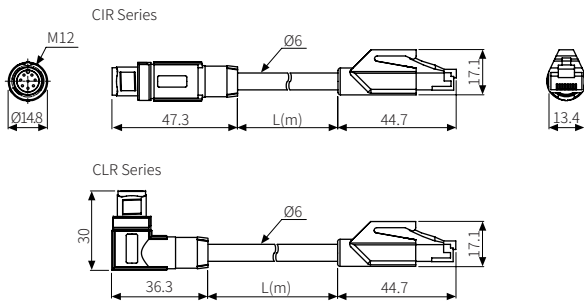
Sold Separately: Power I/O cable (CID-□-VG, CLD-□-VG,)

- Cable length L (m): 2 m, 5 m, 10 m



Sold Separately: Ethernet cable (CIR-□-VG, CLR-□-VG)

- Cable length L (m): 2 m, 5 m, 10 m



Sold Separately: Light (LR-□-06-VG)

Model	Appearance	Color
LR-W-06-VG		White
LR-R-06-VG		Red
LR-G-06-VG		Green
LR-B-06-VG		Blue

- The built-in light is available to be replaced with the assembly tool. Refer to the Replacement of Light.

Sold Separately: Color filter (FL-□-VG)

Model	Appearance	Color	Model	Appearance	Color
FL-R-VG		Red	FL-B-VG		Blue
FL-G-VG		Green	FL-IC-VG		Infrared blocking

- The filter is available to be replaced with the assembly tool. Refer to the Replacement of Filter.

Sold Separately: Polarizing filter (FL-□-VG)

Model	Appearance	Color	Model	Appearance	Color
FL-P-VG		Window	FL-BP-VG		Blue
FL-RP-VG		Red	FL-ICP-VG		Infrared blocking
FL-GP-VG		Green			

- The filter is available to be replaced with the assembly tool. Refer to the Replacement of Filter.

Sold Separately: Connector protection cover (P96-M12-1)

- Connector protection cover protects unused connectors from foreign substances.
- When installing the connector protection cover, tighten the cover with hand.



Sold Separately: Bracket B (BK-VG-B)

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

