IV4-G120

Compact model sensor amplifier

*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

Specifications

Model		IV4-G120
Tools	Available modes	Standard Mode, Sorting Mode, AI Through Count Mode
	Tool with standard mode	Normal/Sorting Modes: AI Differentiate, Outline, ColorArea *1, Area *2, EdgePixels, ColorAverage *1, Brightness Avg *2, Width, Diameter, Edge Presence, Pitch, Color Prohibit, Position Adjustment, Hi-Sp. Adj (1-axis/2-axis), Blob Count, AI Identify, AI Count, Total, AI OCR, AI Trigger AI Through Count Mode: Count, Total
	Number of tools	65 tools *3
Switch settings (programs)		128 programs (with SD card)/32 programs (without SD card)
Image history	Number of storable images	100 images *4
	Save conditions	Logging Settings 1: NGs only/NGs and OKs near threshold *5 /All – selectable. Logging Settings 2: Manually configured number before/after NGs/Fixed interval – selectable *4
Image data transfer	Transfer destination	microSD card/FTP server/SFTP server – selectable
	Transfer format	BMP/JPEG/iv4p/txt: Selectable, file name can be changed
	Transfer conditions	OK/NG/NG and OK near threshold *5 /OK near threshold *5 /All/Judgment Complete – selectable
Analysis information	RUN display	Tool-specific list (judgment results, match, match bar display)
	RUN information	Switchable between OFF/histogram/processing time/count/output monitor Histogram: Histogram, match (MAX, MIN, AVG), OKs, NGs Processing time: Processing time (latest value, MAX, MIN, AVG), cap. time (latest value, MAX, MIN, AVG) Count: No. of triggers, OKs, NGs, no. of trigger errors, Output monitor: Output-specific ON/OFF status *6
Other functions	Image capture function	Digital zoom (×2, ×4), HDR, high gain, color filters *1, white balance *1, brightness correction, Smart Image, preliminary capture, trapezoidal shape correction, mirror inversion correction Capture range settings (with high-speed filter disabled: 1280×960, 640×480, 320×240, 160×120. With high-speed filter enabled: 640×480, 320×240, 160×120, 80×60)
	Tool functions	Additional Learning (AI Differentiate, AI Identify, AI OCR, AI Count, AI Trigger. AI Through Count Mode: Count), remove outline, masking function, color extraction/exclusion *1, color histogram function *1, monochrome histogram function *2, scaling function
	Utilities	List of NG sensor occurrences, NG hold, test run, I/O monitor, security settings (2-step password, Enhanced Security Mode), simulator *7, adding FTP image information, multiple position adjustment, adding multiple masters, high-speed program switching, automatic program switching, automatic settings backup/restore, mid-operation threshold changes, excessive input trigger time detection
Indicators		PWR/ERR, OUT, TRIG, STATUS, LINK/ACT, SD
Input	Type	Switchable between non-voltage input/voltage input

		For non-voltage input: ON voltage 2 V or lower, OFF current 0.1 mA or lower, ON current approx. 2 mA (short circuit) For voltage input: Maximum input rating 30 V, ON voltage 18 V or higher, OFF current 0.15 mA or lower, ON current 2 mA (at 24 V)
	Number of inputs	8 (IN1 to IN8)
	Function	IN1: External trigger. IN2 to IN8: Assign any desired function. Assignable functions: Program switching, error clear, ext. master image registration, SD card save stop, OCR serial no. increment, reset
Output	Type	Open collector output: Switchable between NPN/PNP and N.O./N.C. Maximum rating: 30 V, 50 mA, residual voltage 1.5 V or lower *8
	Number of outputs	8 (OUT1 to OUT8)
	Function	Assign any desired function. Assignable functions (Standard/Sorting Mode): Total status (OK/NG), operation, busy, trigger ready, strobe, position adjustment result, tool-specific judgment results, tool-specific logic calculation results, error, SD card error, parts judgment results, master judgment results, insufficient SD capacity, file transfer in progress, AI Trigger output Assignable functions (AI Through Count Mode): Operation, busy, error, tool-specific count up, tool-specific judgment result, tool-specific logic calculation result
Ethernet	Standard	1000BASE-T/100BASE-TX
	Connector	RJ45 8-pin connector
Network function		FTP client, SFTP client, SNTP client, OPC UA server, MQTT client
Interface compatibility	Built-in Ethernet	EtherNet/IP, PROFINET CC-B *9, TCP/IP Nonprocedural Comm (×2 connections)
	Communication unit (IV4-GCU1)	PROFINET CC-C *10, EtherCAT®
	Communication unit (DL Series)	EtherCAT®, CC-Link, DeviceNet, RS-232C *11
Expanded memory		microSD card (microSD/microSDHC) *12
Power supply	Power voltage	24 V +25%, -20% (including ripple)
	Power consumption	2.2 A or less (at 19.2 V), 1.7 A or less (at 24.0 V) (no AI imaging illumination unit, no communication unit; includes 120 mA output load) 3.9 A or less (at 19.2 V), 3.1 A or less (at 24.0 V) (with AI imaging illumination unit, no communication unit; includes 120 mA output load) 4.0 A or less (at 19.2 V), 3.2 A or less (at 24.0 V) (with AI imaging illumination unit, with communication unit; includes 120 mA output load)
	Average power consumption	9.5 W (sensor amplifier only; no output load) 10.6 W (sensor amplifier, communication unit; no output load)
Environmental resistance	Ambient temperature	0 to +50°C 32 to +122°F (no freezing) *13
	Relative humidity	85% RH or less (no condensation)
Material		Main unit case: PC. Power supply connector: PA. I/O connector: LCP. Sensor head connector: Zinc + Nickel plating/PA. Ethernet connector: Copper alloy + Au plating. Main unit rear heat sink: Aluminum. Main unit rear DIN rail locking claw: POM. Label: PC
Weight		Approx. 290 g 10.24 oz

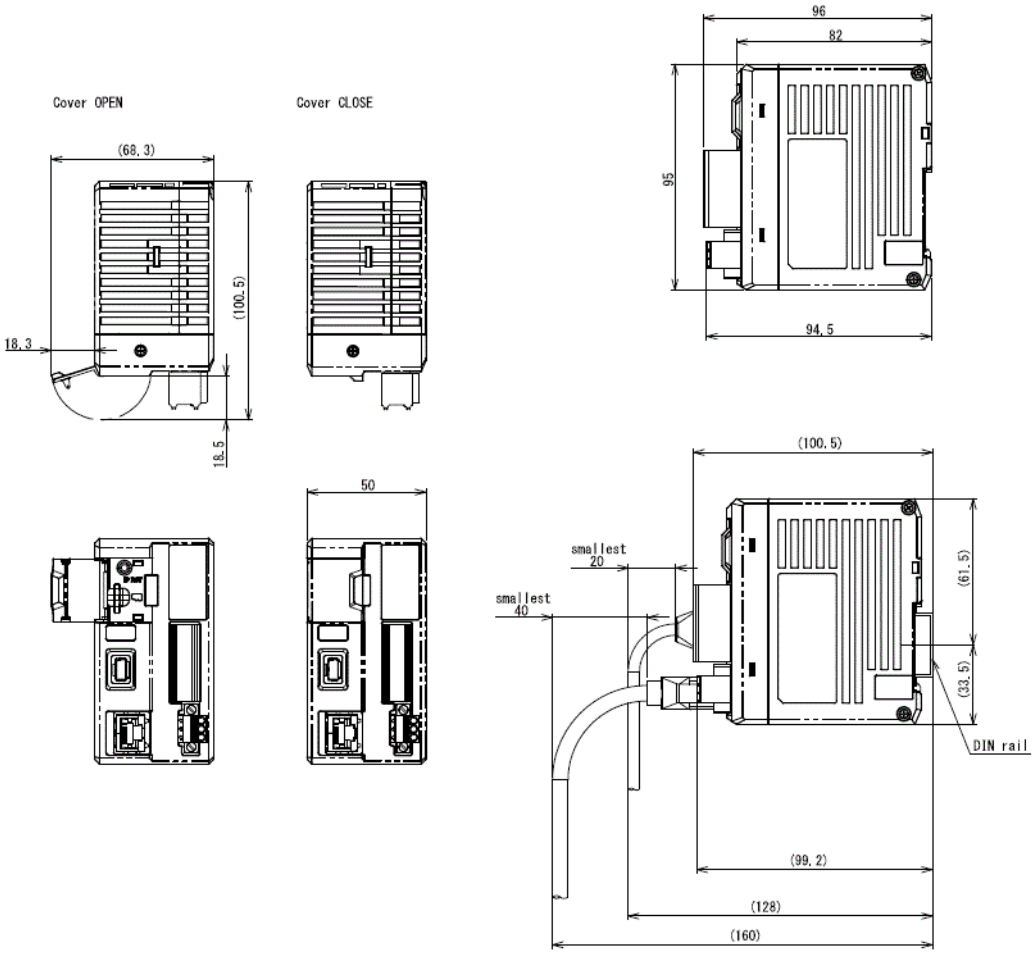
*1 Color model only.
*2 Monochrome model only.
*3 Can be placed on a program-specific basis. This is the total combined number of differentiation tools and position adjustment tools. Up to 64 differentiation tools can be placed. Up to 16 AI Count/AI OCR tools can be placed. In Sorting Mode, 8 differentiation tools can be placed. In AI Through Count Mode and High Speed/Standard Mode, the number of tools that can be placed is two AI Count tools and one Total tool. For high accuracy, six AI Count tools and two Total tools can be placed.
*4 Saved to the sensor amplifier's internal memory. Images saved to the sensor amplifier's internal memory can be backed up to a PC using the PC software (IV-H1SN) or to a USB memory stick or microSD card plugged into the control panel (IV4-CP70) or Display Expansion Unit (IV4-DU10).
*5 AI Differentiate, AI Identify, AI OCR(Show Matching Rate) only.
*6 Can be displayed on the control panel (IV4-CP70) or Display Expansion Unit (IV4-DU10), or via PC software (IV-H1SN).
*7 Can be used with PC software (IV-H1SN).
*8 Set total output to 160 mA or less. Residual voltage specifications apply at an output current of 20 mA or less. At 50 mA, the value is 2.0 V.
*9 Conformance Class B, applicable protocols: LLDP, SNMP
*10 Conformance Class C, applicable protocols: LLDP, SNMP, MRP
*11 With communication unit (DL Series) connected.
*12 Use KEYENCE-recommended parts.

*13 When the operating ambient temperature exceeds 40°C 104°F, install in accordance with KEYENCE instructions, taking appropriate measures for heat dissipation to ensure that the case temperature does not exceed the rated 65°C 149°F. For the case temperature, measure the metallic parts on the rear face of the sensor amplifier.

Dimensions

* Download CAD file or product manual for larger image/text and more detail.

IV4-G120
OP-88648/88649/88650
OP-88835/88836/88837/88838



IV4-G120
OP-88962/88963/88964/88965
OP-88835/88836/88837/88838