

Ricoh launches a new work inspection camera RICOH SC-20

Providing high-definition images for more precise judgment, and interchangeable lenses for applicability in a wider range of workplaces

TOKYO, June 19, 2023 – RICOH Industrial Solutions Inc. (President: Hiroshi Takemoto) announced today the RICOH SC-20, a work inspection camera utilizing image recognition technology to enable real-time confirmation of proper manual work process performance will be launched from July 2023.

The RICOH SC-20, the successor model to the RICOH SC-10A, is a smart camera capable of preventing work errors by automatically checking the status of manufacturing operations to assemble parts and other components through the use of image recognition technology. It is as easy to use as its predecessor model and does not require a PC to save space and secure capture area. Sensor resolution has been increased from around 1 megapixel up to approx. 8 megapixels to enable more precise judgment such as missing parts and assembly errors, and functions available as fee-based options have been added, including the ability to ensure traceability by viewing work log data using the camera alone, as well as barcode scanning and optical character recognition (OCR) as an optional function. The camera's interchangeable lenses also improve applicability in workplaces by ensuring compatibility with a broader range of shooting distance and workpiece sizes.

This enables previously difficult inspections, such as checking for small parts and the direction of mounting/attachment, as well as for the presence of non-woven fabrics and sponges through texture matching evaluations. As an example, the camera can also check areas where visual inspection would otherwise be limited, such as manual assembly processes in cell production systems for automobile parts, electrical and electronic equipment, and precision equipment, and this increase in inspection range is expected to improve work quality. The camera can also reduce the number of defects due to missing parts and assembly errors that occur in manual processes and can even eliminate the need to conduct visual inspections after such processes.

Ricoh Group will continue to support customers improve the way they work by transforming workplaces through its digital devices and services.



<RICOH SC-20>

<Main features of the RICOH SC-20>

- 1. 8 megapixel high-resolution image inspection both during and after work processes**
 - Work instructions can be taken in the camera, and work is checked in real time to ensure that the displayed instructions have been performed according to the proper procedures. If a procedure is not performed correctly, then the next work instruction will not be displayed, enabling reliable work.
 - Image inspection enables the results of work to be inspected in batches, and the number of checkpoints has been greatly increased from the conventional maximum of 9 to a total of 20. Capable of performing shape, color, and texture matching evaluations.
 - Equipped with an approx. 8 megapixel CMOS color sensor (1/1.8 inch). Image quality is far better than conventional models, providing enhanced judgment precision. This also enables judgement of small parts and finer operations.
 - Interchangeable C-mount lenses provide compatibility with various shooting distances and workpiece sizes. These enable use at various workplaces that were previously inapplicable.

- 2. Easy installation and setup with no PC required; Improved scalability and operability of the main unit**
 - Easy installation with no PC required. Simply connect the RICOH SC-20 to a monitor, keyboard, and mouse to use.
 - The main unit is equipped with the software and hardware necessary for work inspection. The software is designed to be simple and is configured to enable setup for work inspection without the need for any special expertise relating to image inspections.

- Also compatible with wireless LANs, USBs, Bluetooth, and external I/O terminals to enable linkage with external devices. Equipped with more external I/O terminals for both receiving and transmitting than conventional models, enabling linkage with a broader array of external devices.
- The system alone is capable of exporting/importing workflow data, including system settings, work instructions and master images of correctly performed work. Connecting devices to the network enables easy application of the same settings on multiple units without the need for an SD card.
- Optional functions can be added to the main camera unit for a fee, including the ability to scan both 1D and 2D codes such as barcodes and QR codes, respectively, as well as OCR for reading text information. In the future, even more optional functions will be added to the lineup to further improve scalability.

3. Log storage function to ensure traceability

- All inspection result images can be stored together with work logs, including worker IDs and time spent on the work, to ensure traceability.
- The work log can be viewed on the main camera unit using a dedicated log viewer. The results of each work item can also be checked in detail. It is also possible to help improve the work process by analyzing the work log. Furthermore, logs can also be exported in CSV format, enabling storage of inspection result images and work logs on a networked NAS, etc.

<RICOH SC-20 Main Specifications>

Item		RICOH SC-20 Main Specifications
Lens mount		C-mount
Image sensor	Format	1/1.8 inch 4K (QFHD) progressive color CMOS
	Number of pixels	3840 (H) × 2160 (V)
	Cell size	2.0 (H) × 2.0 (V) μm
Instruction step	Instruction step file	JPG format (610 (H) x 680 (V))
Matching	Method	Shape, color, texture
	Area setting (ROI)	Specify area with absolute position
	Position correction	Relative position correction from reference position
	Position rotation correction	±180° (shape only)

	Number of simultaneous registrations	Maximum 20 places
Data input	Number of characters check	Check whether matches set number of characters
	Character string check	Check whether matches set character string on left
Result logging	Output method	Saved in CSV format to the specified path
	Log information	Work ID, reference ID, user ID, instruction step, inspection step, date/time, standard time, elapsed time, process item, judgment result, final judgment result, image log file name, process data
Image logging	Output method	Saved in JPG format to the specified path
	Setting method	Image logging can be enabled or disabled for each inspection step.
External interfaces	HDMI	1920 (H) x 1080 (V) / 60Hz
		* Voice output is not supported.
	USB	Type-A x 1: USB 3.0 Super Speed supported (Host)
		Type-C x 1: USB 3.0 Super Speed supported (Host)
		USB PD supported, USB DP Alt Mode not supported
		* Supported class: USB-HID, USB-Mass Storage, USB-Audio
	Ethernet	RJ-45x1 100Base-TX / 1000Base-T
	microSD card	microSD / SDHC / SDXC x1 High Speed / UHS-I supported
	External GPIO	OUT (insulated): 6 pieces
		IN (insulated): 10 pieces
OUT/IN (insulated) power: 5 V to 24 V ±10%		
Wireless LAN (Models with a wireless communication system only)	IEEE802.11a/b/g/n/ac (2.4 GHz/5 GHz) compliant	
Bluetooth (Models with a wireless communication system only)	Bluetooth 5.0 BR/EDR Class 2	
I/O	Buzzer	Electromagnetic (Volume: high, low, mute)
	LED indicator lamps	Power, OK, FAIL
	Switch	Power
Storage area	Area accessible by user	25GB

Ratings	Power voltage	12 V DC \pm 10% 3A or more (USB PD) 12/24 V DC \pm 10% (external connector) * Power must not be supplied from both connectors at the same time.
	Power consumption	8.6 W or less
Environmental resistance	Operating temperature range	0 to 40°C
	Storage temperature range	-20 to +60°C
	Ambient humidity range	30 to 80% RH * No condensation
External dimensions		78 (W) x 73.5 (H) x 117.9 (D) mm (excluding attached lens and connectors)
Weight		Approx. 460 g
Mounting holes		Tripod screw hole (ISO 1222 compliant), M4 screw hole x 2

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For customer inquiries, please contact

<https://www.rins.ricoh.co.jp/en/contact/>

Relevant Information

RICOH SC-20

https://industry.ricoh.com/en/fa_camera_lens/work-assistance-camera-system/sc-20

Related News

New Product Release – The RICOH SC-10A

<https://www.ricoh-iosd.eu/en/category/5/news/19/news-machine-vision-RICOH>

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Ricoh is a leading provider of integrated digital services and print and imaging solutions designed to support digital transformation of workplaces and optimize business performance.

Headquartered in Tokyo, Ricoh's global operation reaches customers in approximately 200 countries and regions, supported by cultivated knowledge, technologies, and organizational capabilities nurtured over its 85-year history. In the financial year ended March 2023, Ricoh Group had worldwide sales of 2,134 billion yen (approx. 16.0 billion USD).

It is Ricoh's mission and vision to empower individuals to find Fulfillment through Work by understanding and transforming how people work so we can unleash their potential and creativity to realize a sustainable future.

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