



# Stator Systems

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## Vision systems for commutator alignment



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cm /I3 Do Q

The HCP/ZF horizontal armature and commutator alignment press combines with the state of the art Omron FZ2 series vision system. The commutator is located in the machine chuck and the armature into a tooling support ring. The use of a chuck allows for the commutator to easily and accurately be rotated to allow the camera to detect the edges of the armature slot and line up accurately with the centre of the mica slot in the commutator, to  $\pm 1^\circ$  0.2mm. A hydraulic press is then used to press the commutator onto the shaft of the armature and still maintain it accuracy.

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OMRON's top-of-the-line FZ2 Vision Sensor handles essentially any type of inspection or measurement. To achieve this OMRON has raised sensing performance beyond the competition. Another "dimension" has been added to advanced colour and resolution capabilities to develop the world's first Vision Sensor capable of 3-dimensional measurements. "Colour," "resolution," and "3D" capabilities were combined to provide the ultimate solution to all your future inspection needs.

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The Vision Sensor recognizes 256 gradations of each of the RGB colours, so over 16.77 million colours are captured. It also features a completely new high-speed image processing technology. The Vision Sensor processes colour data approaching the abilities of the human eye, so stable measurements are possible even in lighting conditions that are similar to natural light. Subtle variations in colour are thus accurately recognized, even when there is little contrast between the sample and the background.

Nine different types of camera are available, and up to four cameras can be connected to a single controller. Different kinds of cameras can be connected simultaneously to the same controller, making it possible to combine both colour cameras and black & white cameras, or 300,000-pixel and 2-million-pixel cameras.

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Item		Descriptions			Model	Remarks
Controllers	Integrated with LCD	Can connect Cameras other than 2-million-pixel Digital Camera. Can connect all Camera models.	Two-camera Controller	NPN	FZ2-300	With touch pen
				PNP	FZ2-305	
			Four-camera Controller	NPN	FZ2-300-10	
				PNP	FZ2-305-10	
			Two-camera Controller	NPN	FZ2-500	
				PNP	FZ2-505	
			Four-camera Controller	NPN	FZ2-500-10	
				PNP	FZ2-505-10	
	Box-type	Can connect Cameras other than 2-million-pixel Digital Camera. Can connect all Camera models.	Two-camera Controller	NPN	FZ2-350	---
				PNP	FZ2-355	
			Four-camera Controller	NPN	FZ2-350-10	
				PNP	FZ2-355-10	
			Two-camera Controller	NPN	FZ2-550	
				PNP	FZ2-555	
Four-camera Controller			NPN	FZ2-550-10		
			PNP	FZ2-555-10		
Cameras	Intelligent Cameras	Narrow field of vision	Color		FZ-SLC15	Camera + Zoom, Autofocus Lens
		Wide field of vision			FZ-SLC100	
	Autofocus Camera	Narrow field of vision	Color		FZ-SZC15	Camera + Intelligent Lighting Autofocus Lens
		Wide field of vision			FZ-SZC100	
	Digital Camera	300,000 Pixels	Monochrome		FZ-S	CCTV Lens required.
			Color		FZ-SC	
		2 million pixels	Monochrome		FZ-S2M	
			Color		FZ-SC2M	
Lenses	High-resolution, Low-distortion Lenses				FZ-LEH5/LEH8/LEH12/LEH16/LEH25/LEH35/LEH50/LEH75/LEH100	Only for 2-million-pixel Camera.
	CCTV Lenses				3Z4S-LE Series	---

Cables	Camera Cable		FZ-VS	Cable length: 2 m, 5 m, or 10 m (See note 2.)
	Bend resistant Camera Cables		FZ-VSB	Cable length: 2 m, 5 m, or 10 m (See note 3.)
	Right-angle Camera Cable (See note 1.)		FZ-VSL	Cable length: 2 m, 5 m, or 10 m (See note 2.)
	Long-distance Camera Cable		FZ-VS2	Cable length: 15 m
	Long-distance Right-angle Camera Cable		FZ-VSL2	(See note 4.) Cable length: 15 m
	Cable Extension Unit		FZ-VSJ	(See note 4.) Extension Units and three Cables can be connected. (Maximum Cable length: 45 m) (See note 5.)
Peripheral Devices	Monitor Cable		FZ-VM	Cable length: 2 m or 5 m
	Parallel Cable		FZ-VP	Cable length: 2 m or 5 m
	Diffusion Plate for Intelligent Camera LCD Monitor	Narrow field of vision	FZ-SLC15-DL	---
		Wide field of vision	FZ-SLC100-DL	---
			FZ-M08	For Box-type Controllers
	USB Memory	256 MB 1 GB	FZ-MEM256 FZ-MEM1G	Capacity: 256 MB Capacity: 1 GB
	VESA attachment		FZ-VESA	For installing LCD integrated type controller
	Desktop Stand		FZ-DS	For installing LCD integrated type controller

Mouse	---	Recommended Products (Optical Mouse)" Microsoft Corporation: Compact Optical Mouse,
External Lighting Strobe Controller (for FZ Series Vision Sensors)	3Z4S-LT Series Manufactured by MORITEX Corporation 3Z4S-LT MLEK-C100E1TS 2	U81 Series Required to control external lighting from a Control