

Pushbutton-type Photomicrosensor EE-SA701/801

CSM_EE-SA701_801_DS_E_4_3

Using a pushbutton enables accurately detecting difficult-to-detect objects.



- Conforms to standards for semiconductor FOUP cassettes to enable accurately detecting FOUP cassettes without being affected by the material, color, or reflectance of the bottoms of the cassettes.
- Thin design enables mounting in a wider range of applications, e.g., on transfer arms.
- Increased visibility with 4-direction indicator.
- Optical detection of actuator operation provides a long life (mechanical life: 5 million operations min.).
- Models available with PNP or NPN output.
- Models are available with very flexible robot cable.



 Be sure to read *Safety Precautions* on page 5.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Ordering Information

List of Models

Appearance	Sensing distance	Sensing method	Operation mode	Cable length	Model	
					NPN output	PNP output
	 (See note 2.) 0 to 3.5 mm (pressed position) (See note 1.)	Pushbutton	ON with no load	1 m	EE-SA801A 1M	EE-SA801R 1M
			OFF with no load	1 m (robot cable)	EE-SA801A-R 1M	EE-SA801R-R 1M
					EE-SA701-R 1M	EE-SA701P-R 1M

Note: 1. Distance from the top surface of the housing to the top of the actuator.

2. Output reverses between 3.5 and 4.5 mm.

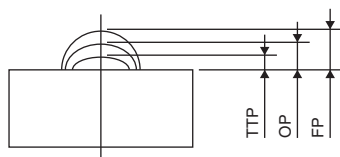
Ratings and Specifications

Item		Model	NPN output	EE-SA801A	EE-SA801A-R	EE-SA701-R
			PNP output	EE-SA801R	EE-SA801R-R	EE-SA701P-R
Indicator			Light red when actuator is pressed.			Lit red while there is no load on actuator
Operation Specifications (See	Free position (FP)		5.0±0.4 mm			
	Operating position (OP)		3.5 to 4.5 mm (See note 2.)			
	Total travel position (TTP)		0 mm max.			
Operating load (See note 3.)			3 N max. (typical: 0.5 N)			
Supply voltage			12 to 24 VDC±10%, ripple (p-p): 10% max.			
Current consumption			35 mA max.			
Control output			NPN Models: NPN open collector, 5 to 24 VDC, 50 mA max.; residual voltage of 0.4 V max. at 50-mA load current OFF current: 0.5 mA max. PNP Models: PNP open collector, 5 to 24 VDC, 50 mA max.; residual voltage of 0.4 V max. at 50-mA load current OFF current: 0.5 mA max.			
External diagnosis input		Input	NPN Models Emission OFF: Shorted to 0 V or 0.5 V max. (source current: 30 mA max.) Emission ON: Open (leakage current: 0.4 mA max.) PNP Models Emission OFF: Shorted to +DC or +DC-0.5 V max. (sink current: 30 mA max.) Emission ON: Open (leakage current: 0.4 mA max.)			
		Response time	1 ms max.			
Protection circuits			Reversed power supply polarity protection			
Ambient temperature range			Operating: -25 to +55°C Storage: -30 to +60°C (with no icing or condensation)			
Ambient humidity range			Operating: 5% to 85% Storage: 5% to 95% (with no condensation)			
Mechanical durability			5,000,000 operations min. (One operation is from the free position to operating position and back to the free position.)			
Vibration resistance			Destruction: 10 to 500 Hz, 1.0-mm single amplitude or 150 m/s ² 3 times each in X, Y, and Z directions for 11 min. each			
Shock resistance			Destruction: 500 m/s ² for 3 times each in X, Y, and Z directions			
Degree of protection			IEC IP40			
Connecting method			Pre-wired (standard cable length: 1 m)	Pre-wired (robot cable length: 1 m)		
Weight			Approx. 16.1 g			
Material	Case		Polycarbonate			
	Actuator		Polyacetal			
Accessories			Instruction Manual			

Note: 1. Free position (FP): The position of the top of the actuator when no force is being applied to the actuator.

Operating position (OP): The position of the top of the actuator when the actuator is pressed and the output transistor changes from OFF to ON for the EE-SA701-R/-SA701P-R and from ON to OFF for all other models.

Total travel position (TTP): The position of the top of the actuator when the actuator is pressed as far as it can be pressed.



2. This does not indicate that the output will be ON from 3.5 to 4.5 mm, but rather that the output will change from ON to OFF at some point between 3.5 and 4.5 mm.

3. The force required to press the actuator from the FP to the OP.

