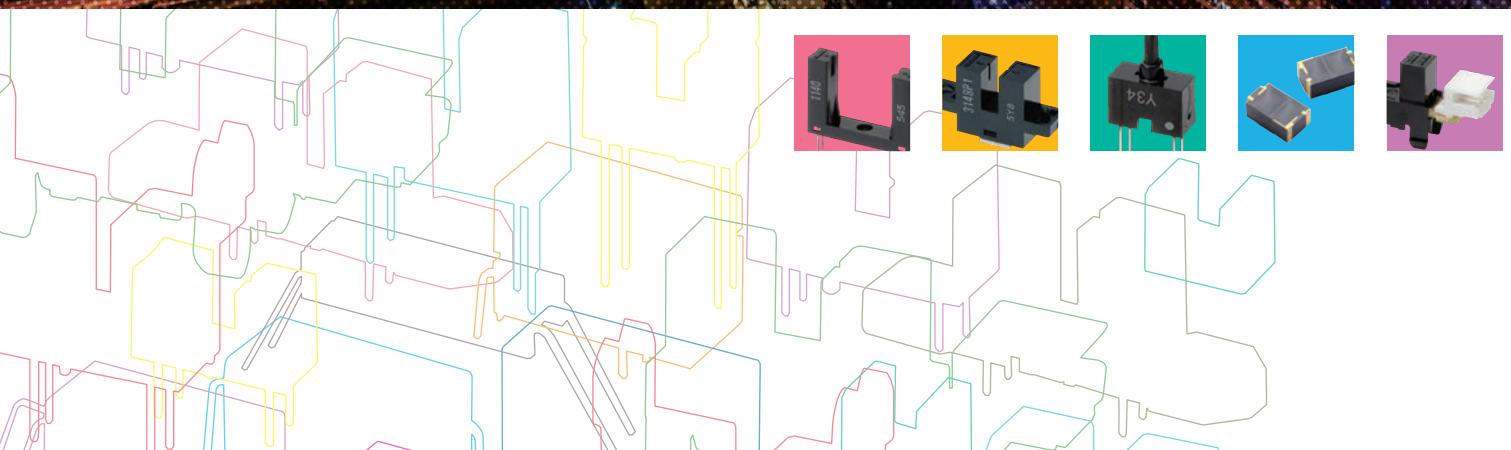


OMRON

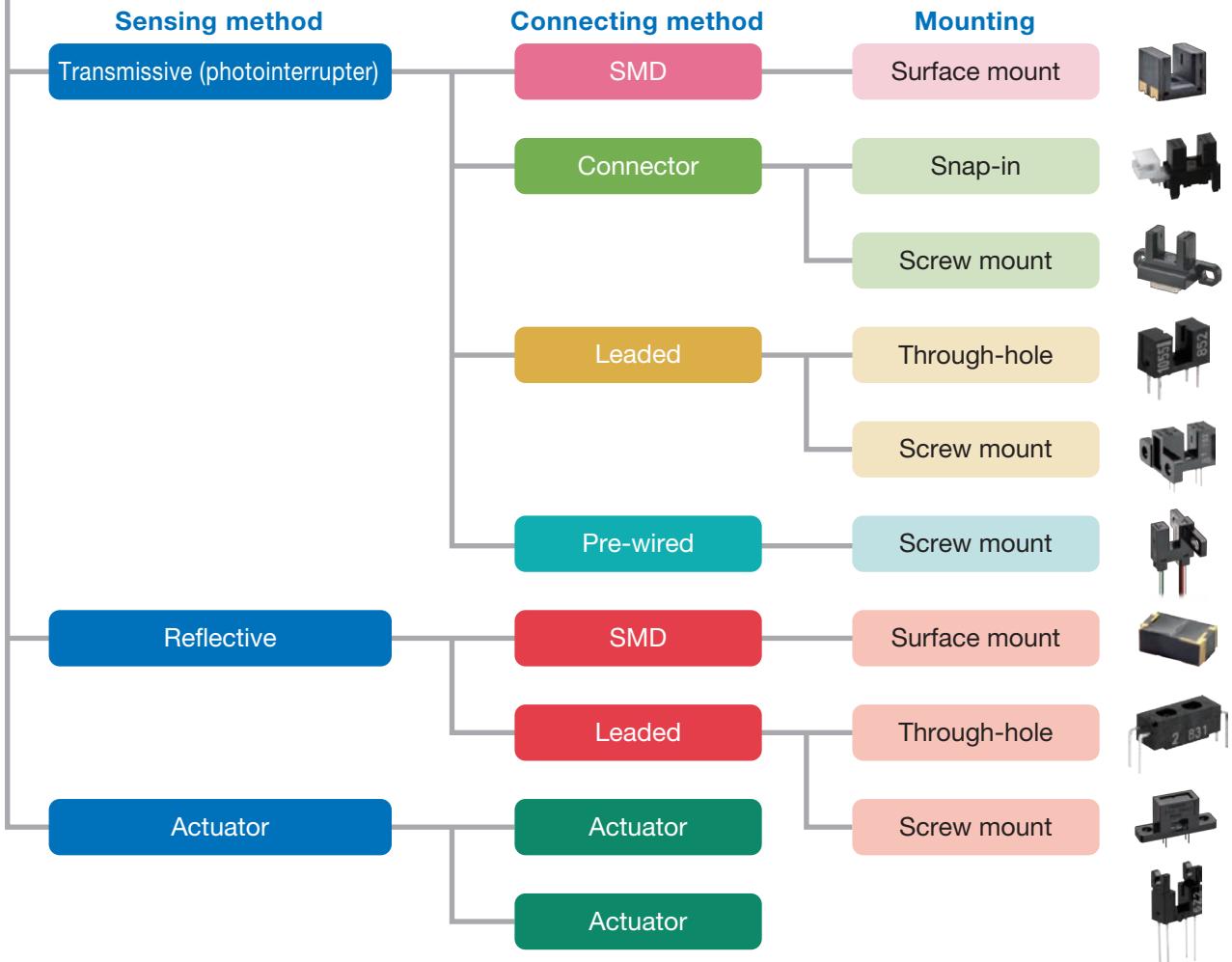
Photomicrosensors Selection Guide

A wide range of variations and high reliability
Optical sensors for built-in devices



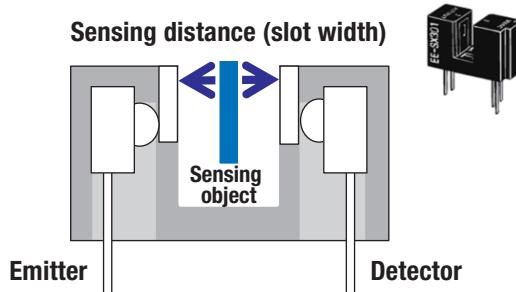
Product Selection

Photomicrosensors



Detection

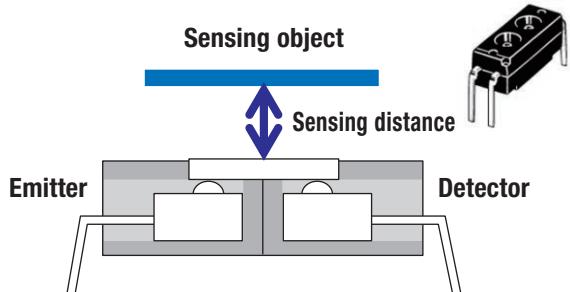
Transmissive (photointerrupter)



Objects are sensed as the light beam is blocked by an object.

- Stable sensing of opaque objects
- High accuracy in positioning

Reflective (photoreflector)



Objects are sensed by the reflected light on the object.

Take advantage of a wide selection of installation-type and PCB-mounted photomicrosensors.
Choose the product that best fits the application from a wide variety of available options.

SMD

Connector

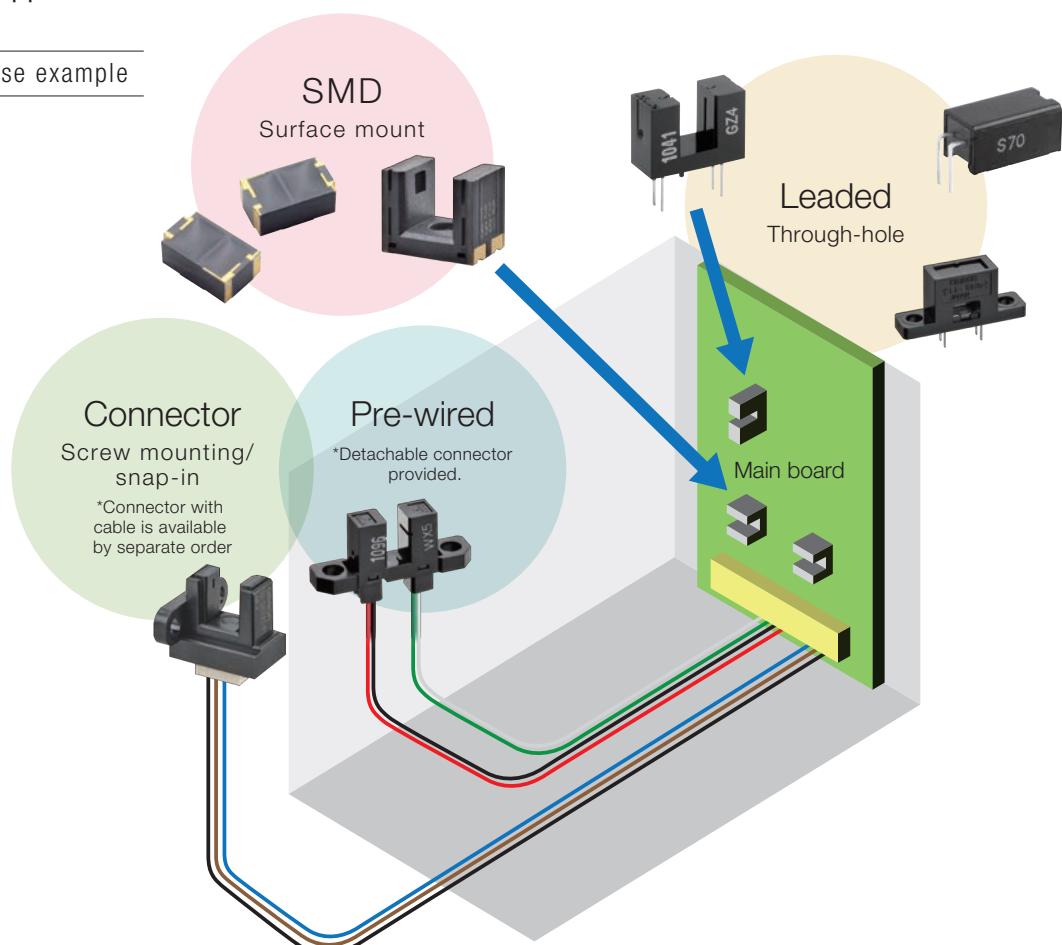
Leaded

Pre-wired

Connection/Mounting

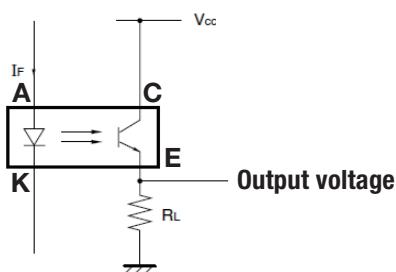
SMD, connector, leaded, or pre-wired photomicro sensors are available for use in a wide variety of connection and mounting applications.

General use example



Output

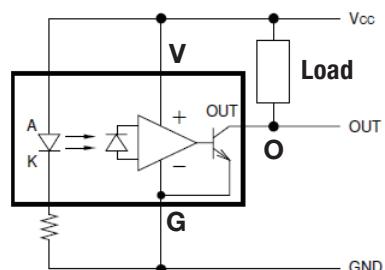
Phototransistor output



Flexible circuit design

Can be proper threshold level according
to the application

Photo IC output



Ideal for high-speed applications

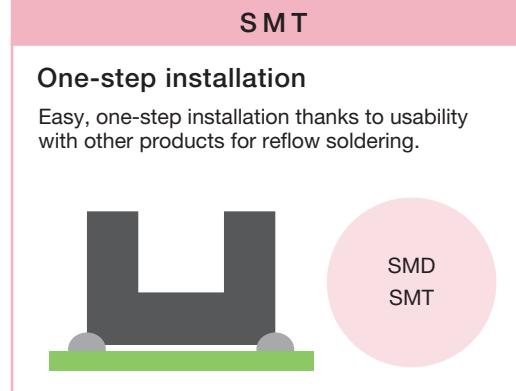
Take advantage of fast response speeds

Recommended OMRON sensors for

SMD

Reduce assembly work and save space

- Keep equipment sizes down
- 2 to 5 mm slot widths available
- Photo IC output models available for use in high-speed applications
- 2-channel models available for encoder functionality



SMD Model Lineup



Slot width: 2mm



Slot width: 3 mm



Slot width: 4 mm



Slot width: 5 mm

Phototransistor output

EE-SX1320
EE-SX1321 (2 channels)

EE-SX1330

EE-SX1340

EE-SX1350

Photo IC output

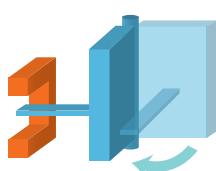
EE-SX4320

EE-SX3340
EE-SX4340

EE-SX3350
EE-SX4350

Application Examples

Presence detection



Ex.: Non-contact switch for equipment subject to shocks



Amusement equipment

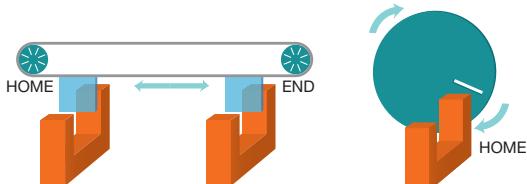


Robotic vacuum cleaners

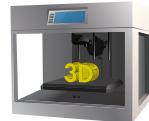


Medication related equipment

Position detection



Cash dispensers



3D printers



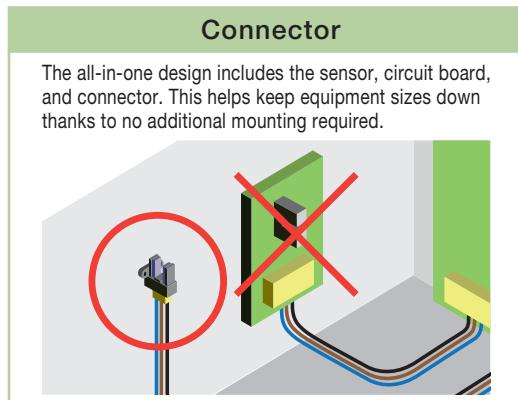
Commercial coffee machines

evolving needs

Connector

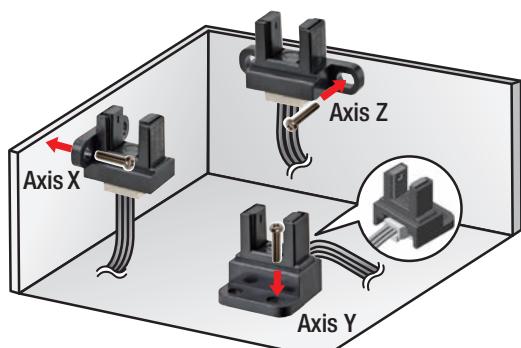
No mounting required for reduced workload!

- All-in-one design for improved miniaturization
- Screw-based mounting for a more reliable installation
- M3 screw-mounting model is added.
- Connector with cable (Order Separately) is available.



Greater equipment design flexibility!

Choose from X-, Y-, or Z-axis mounting options.

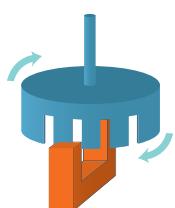


Slot width: 5.0mm

Shape: Three screw-mounting models

Output: Photo IC

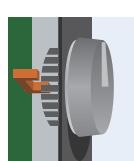
Rotation detection



Smart gas meters



Mobile IP cameras



Various dials

Rotation and direction detection



Ex.: 2-channel photomicro sensor



Robots



Camera lens mechanisms



Analytical equipment
(trackball devices)

Photomicrosensors EE Series

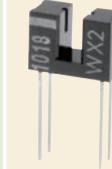
Model *1	EE-SX1320 /4320	EE-SX1321	EE-SX1330	EE-SX1340 /3340,4340	EE-SX1350 /3350,4350	EE-SX3173 /4173-P	EE-SX3162 /4162-P1-(Z),P2	EE-SX3163 /4163-P1,P2
Sensing Type (Termination)	Transmissive (SMD)					Transmissive (Connectors)		
	NEW!	NEW!	NEW!	NEW!	NEW!	NEW!		
								
Mounting Type	Surface Mount	M3 screw mounting	M2 screw mounting	M2 screw mounting				
Sensing Distance	2mm	2mm	3mm	4mm	5mm	5mm	5mm	5mm
Output configuration *2	PTr/P-IC	PTr	PTr	PTr/P-IC	PTr/P-IC	P-IC	P-IC	P-IC
Aperture Size	0.3mm	0.3mm	0.3mm	0.5mm	0.5mm	0.5mm	0.5mm	0.5mm
Dimensions (LxWxH)	5.1×4×4	5.1×4×4	6×4×5	8×4×5.5	9×4×9	13.6×14.8×14.7	13×16×14	13.6×13.3×14.7
Features	Ultra-compact	Output 2ch, Ultra-compact	Ultra-compact	Compact	General purpose	Connector with lock manufactured Drive voltage 5/24 V	Connector with lock manufactured	Connector with lock manufactured

Model *1	EE-SX493	EE-SX1055	EE-SX1046	EE-SX1106	EE-SX198 /398,498	EE-SX1071 /301,401	EE-SX1057	EE-SX1128
Sensing Type (Termination)	Transmissive (Terminal)							
								
Mounting Type	Through-hole	Through-hole	Through-hole	Through-hole	Through-hole	Through-hole	Through-hole	Through-hole
Sensing Distance	2mm	2.8mm	3mm	3mm	3mm	3.4mm	3.6mm	4.2mm
Output configuration *2	P-IC	PTr	PTr	PTr	PTr/P-IC	PTr/P-IC	PTr	PTr
Aperture Size	0.2mm	0.5mm	0.5mm	0.4mm	0.5mm	0.5mm	2mm	0.5mm
Dimensions (LxWxH)	11×8×9.7	8.9×4×5.4	10×6.5×5	6.4×4.2×5.4	12.2×5×10	13.6×6.2×10.4 /15.4×6.2×10.4	13×6.35×11.5	13.5×5.2×9.3
Features	High-resolution model	Compact	Horizontal aperture	Compact	General purpose Without a positioning boss ³	General purpose	Dustproof	Horizontal aperture With a positioning boss

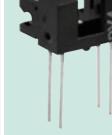
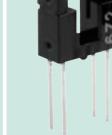
Model *1	EE-SX1096	EE-SG3 ,SG3-B	EE-SX1161-W11 /3161-W11,4161-W11	EE-SX1088-W11 /3088-W11,4088-W11	EE-SX1096-W11 /3096-W11,4096-W11	EE-SX1160-W11 /3160-W11,4160-W11	EE-SY1200	EE-SY171
Sensing Type (Termination)	Transmissive (Terminal)		Transmissive (Prewired)			*Detachable connector	Reflective	
								
Mounting Type	Screw Mounting	Screw Mounting	Screw Mounting	Through-hole				
Sensing Distance	3.4mm	3.6mm	3.2mm	3.4mm	3.4mm	9.5mm	1mm	3.5mm
Output configuration *2	PTr	PTr	PTr/P-IC	PTr/P-IC	PTr/P-IC	PTr/P-IC	PTr	PTr
Aperture Size	0.5mm	2mm	0.5mm	0.5mm	0.5mm	0.5mm	not applicable	not applicable
Dimensions (LxWxH)	25×6×10	25.4×6.35×11.7	12.95×23.7×12.7	25×6×10	25×6×10	31.75×6×15.5	3.2×1.9×1.1	14×4.2×3
Features	Horizontal aperture	Dustproof	Dustproof	General purpose	Horizontal aperture	Wide slot	Ultra-compact	Thin

*1 EE-SX3~...Dark On, EE-SX4~...Light On *2 PTr...Phototransistor, P-IC...Photo-IC

*3 With a positioning boss version...EE-SX199 *4 With a positioning boss version...EE-SX1115

EE-SX3164 /4164-P1,P2	EE-SX1235A-P2 /3239-P2,4235A-P2	EE-SX460-P1	EE-SX461-P11	EE-SX3148-P1	EE-SX3009-P1 ,4009-P1	Accessories for connector type	EE-SX1018	EE-SX1103	EE-SX1105
Transmissive (Connectors)						Connector with cable (sold separately)	Transmissive (Terminal)		
									
M2 screw mounting	Snap-In	Snap-In	Snap-In	Screw Mounting	Screw Mounting	EE-1005 Tyco Electronics Cable length:1m NEW!	Through-hole	Through-hole	Through-hole
5mm	5mm	5mm	15mm	3.6mm	5mm		2mm	2mm	2mm
P-IC	PTr/P-IC	P-IC	P-IC	P-IC	P-IC		PTr	PTr	PTr
0.5mm	0.5mm	0.5mm	2mm	0.5mm	0.5mm		0.5mm	0.4mm	0.4mm
22.6×8.3×14	27×8×15.9	30×11×23.6	32.5×12×23.6	26×6.4×13.5	34×11×21	EE-5002 J.S.T. Mfg. Cable length:1m	8×4×6	5×4.2×5.2	4.9×2.6×3.3
Connector with lock manufactured	High-resolution model, Easy to mount	Wide slot, Easy to mount	A boss on one side enables securing the Sensor	High-resolution model			Compact	Ultra-compact	Ultra-compact

EE-SX1081 /3081,4081	EE-SX1041	EE-SX1042	EE-SX1035	EE-SX1070 /3070,4070	EE-SX1140	EE-SX129	EE-SH3	EE-SV3	EE-SX1088 /3088,4088
Transmissive (Terminal)									
									
Through-hole	Through-hole	Through-hole	Through-hole	Through-hole	Through-hole	Screw Mounting	Screw Mounting	Screw Mounting	Screw Mounting
5mm	5mm	5mm	5.2mm	8mm	14mm	3mm	3.4mm	3.4mm	3.4mm
PTr/P-IC	PTr	PTr	PTr	PTr/P-IC	PTr	PTr	PTr	PTr	PTr/P-IC
0.5mm	0.5mm	0.5mm	1mm	0.5mm	1.5mm	0.2mm	0.2/0.5/1mm	0.2/0.5/1mm	0.5mm
13.7×5×10	14×6×10	14×5×14.5	12.6×6.3×6.9	17.7×6×10	23×5×16.3	13×11×8	25.4×6.2×10,415.1×19×10.4	25×6×10	
General purpose	With a positioning boss	High profile Without a positioning boss ⁴	Compact with wide slot	Wide slot, With a positioning boss	Wide slot	High-resolution model	High-resolution model	High-resolution model	General purpose

EE-SY169 ,169A,169B	EE-SY113 /313,413	EE-SY110 /310,410	EE-SF5 ,SF5-B	EE-SB5	EE-SA105	EE-SA103	EE-SA104	EE-SA407-P2	EE-SA401-P12
Reflective					Actuator				
									
Through-hole	Through-hole	Through-hole	Through-hole	Screw Mounting	Through-hole	Through-hole	Through-hole	Snap-In	Snap-In
4mm	4.4mm	5mm	5mm	5mm	2.1mm	3mm	3mm	3.6mm	3mm
PTr	PTr/P-IC	PTr/P-IC	PTr	PTr	PTr	PTr	PTr	P-IC	P-IC
not applicable	not applicable	not applicable	not applicable	not applicable	not applicable	0.5mm	0.5mm	0.5mm	0.5mm
12.5×6×8	12×6.2×6	12×4.6×4.8	13×5.7×8	25.4×6.35×11.5	9.4×4.4×14.2	9×4×6	9×4×9.7	27×8×21.9	30×11×18.5
Red LED, A:General purpose, B:Red LED, High power	Dustproof	General purpose	Dustproof	Dustproof	Low operating force	Side attachment	Top attachment	Top attachment	Long distance

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