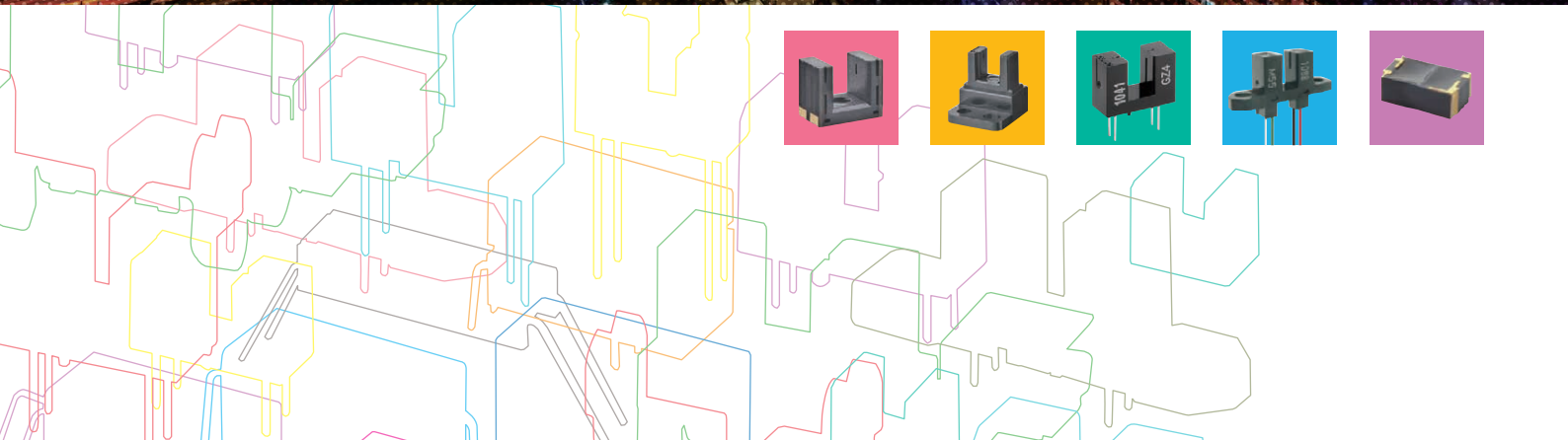
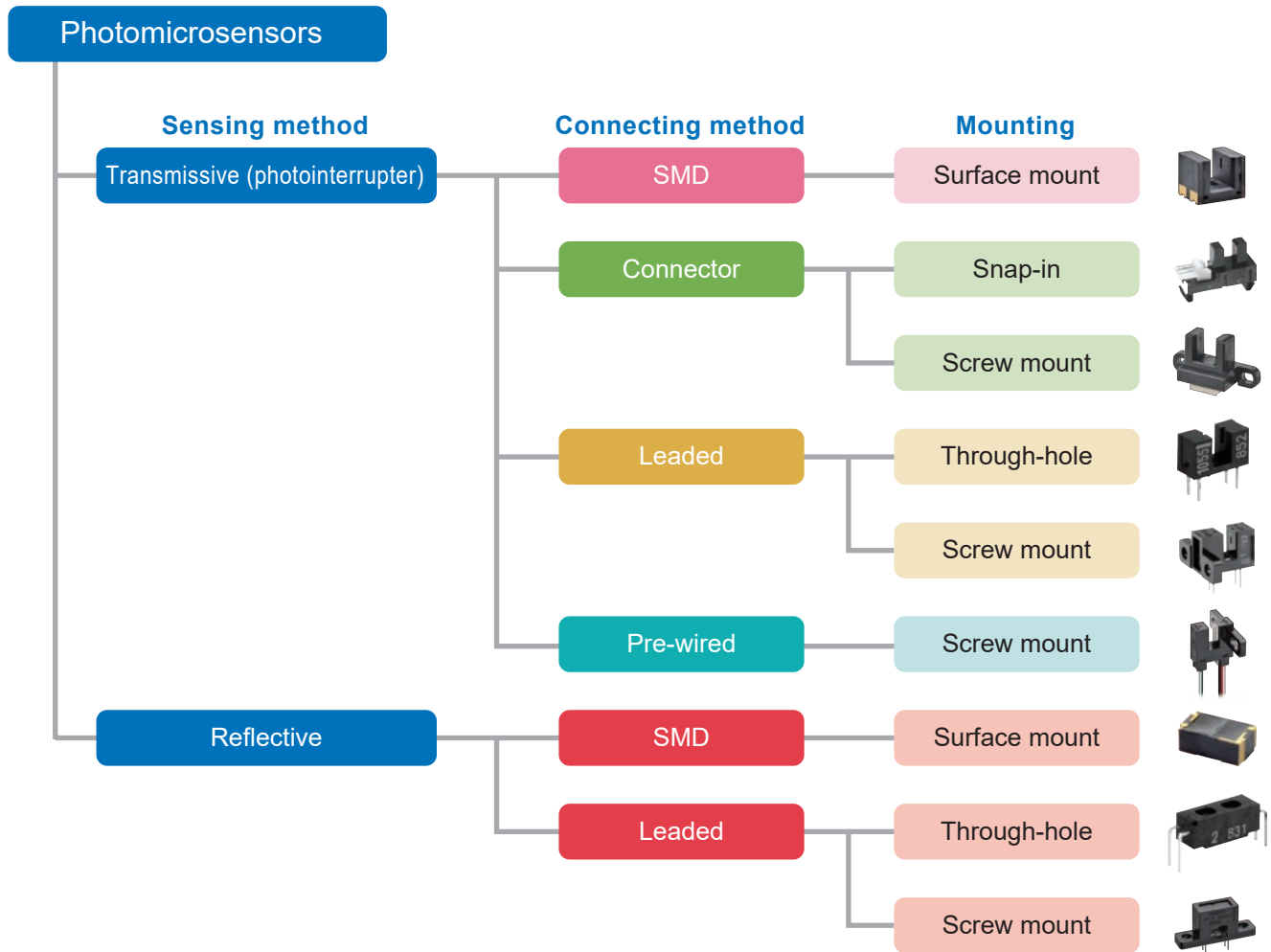


Photomicrosensors Selection Guide

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

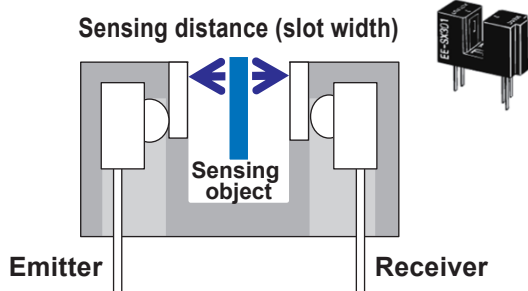


Product Selection



Detection

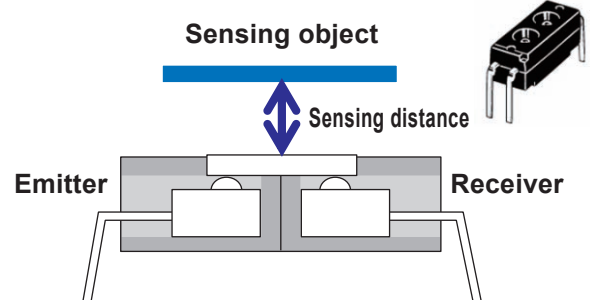
Transmissive (photointerrupter)



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

- Stable sensing of opaque objects
- High accuracy in positioning

Reflective (photoreflexor)



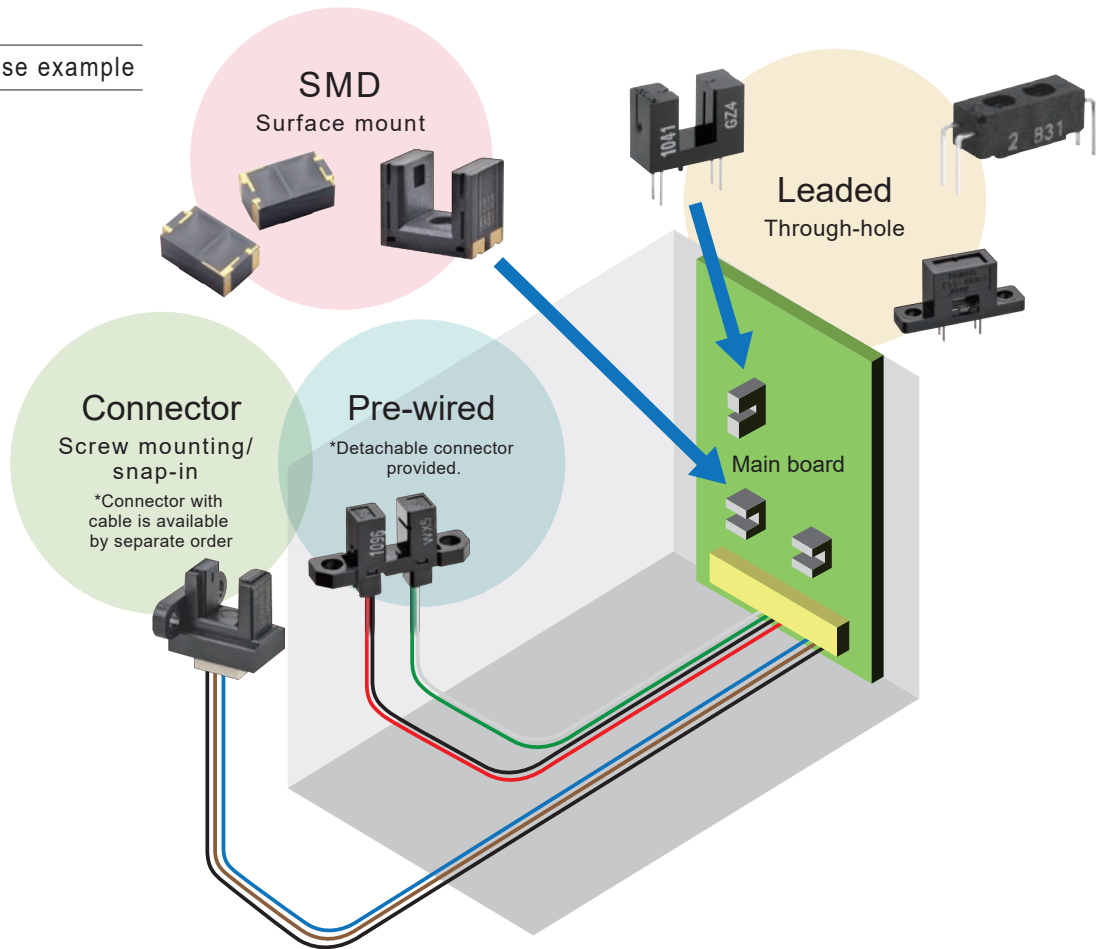
Objects are sensed by the reflected light on the object.

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 applicaiton

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

SMT

One-step installation
Easy, one-step installation thanks to usability with other products for reflow soldering.

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-SX1330-2
(high-speed response type)

EE-SX1340

EE-SX1350

Photo IC output

EE-SX4320

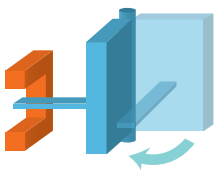
EE-SX4330

EE-SX3340
EE-SX4340

EE-SX3350
EE-SX4350

Application Examples

Presence detection



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



Amusement equipment

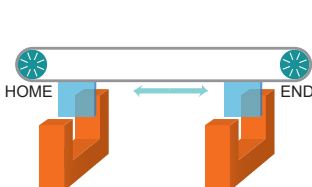


Robotic vacuum cleaners

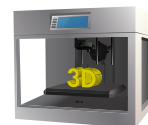


Medication related equipment

Position detection



Cash dispensers



3D printers



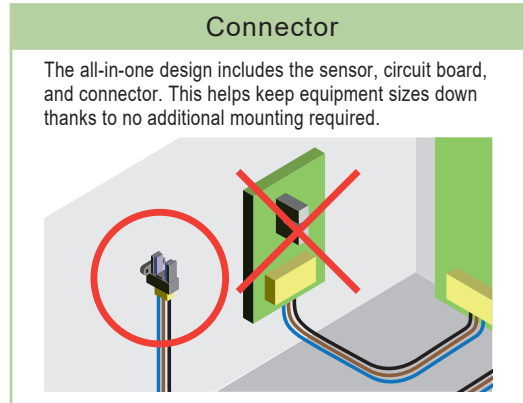
Commercial coffee machines

Evolving Needs

Connector

No mounting required reducing 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.

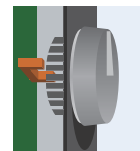
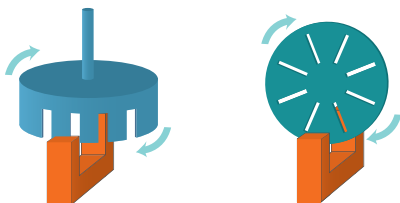


Greater equipment design flexibility!
Choose from X-, Y-, or Z-axis mounting options.

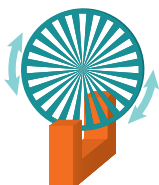
Mouting options	Axis X	Axis Y	Axis Z
Model	EE-SX3162 EE-SX4162	EE-SX3163 EE-SX3173 EE-SX4163 EE-SX4173	EE-SX3164 EE-SX4164
Model type suffix	-P1	-P2	-P3
Power supply voltage	12VDC	5VDC	24VDC

Slot width : 5.0mm Output : Photo IC

Rotation detection



Rotation and direction detection



Photomicrosensors EE Series

Model ^{*1}	EE-SX1320 /4320	EE-SX1321	EE-SX1330, 1330-2 ^{*2} /4330	EE-SX1340 /3340,4340	EE-SX1350 /3350,4350	EE-SX3173 /4173-P	EE-SX3162 /4162-P1(-Z), P2
Sensing Type (Termination)	Transmissive (SMD)					Transmissive (Connectors)	
							
Mounting Type	Surface Mount	Surface Mount	Surface Mount	Surface Mount	Surface Mount	M3 Screw-mounting	M2 Screw-mounting
Sensing Distance	2mm	2mm	3mm	4mm	5mm	5mm	5mm
Output Configuration ^{*2}	PTTr/P-IC	PTTr	PTTr/P-IC	PTTr/P-IC	PTTr/P-IC	P-IC	P-IC
Aperture Size	0.3mm	0.3mm	0.3mm	0.5mm	0.5mm	0.5mm	0.5mm
Dimensions (L×W×H)	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
Features	Super miniature	Output 2ch Super miniature	Super miniature	Miniature	General purpose	Connector with lock Driving voltage 5/24V	Connector with lock
Model ^{*1}	EE-SX493	EE-SX1055	EE-SX1046	EE-SX1106	EE-SX198 /398,498	EE-SX1071	EE-SX1081 /3081,4081
Sensing Type (Termination)	Transmissive (Terminal)						
							
Mounting Type	Board Mount	Board Mount	Board Mount	Board Mount	Board Mount	Board Mount	Board Mount
Sensing distance	2mm	2.8mm	3mm	3mm	3mm	3.4mm	5mm
Output Configuration ^{*2}	P-IC	PTTr	PTTr	PTTr	PTTr/P-IC	PTTr/P-IC	PTTr/P-IC
Aperture Size	0.2mm	0.5mm	0.5mm	0.4mm	0.5mm	0.5mm	0.5mm
Dimensions (L×W×H)	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	13.7×5×10
Features	High resolution	Miniature	Horizontal aperture	Miniature	General purpose Without a positioning boss ^{*3}	General purpose	General purpose
Model ^{*1}	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-SY199	EE-SY1201	EE-SY171
Sensing Type (Termination)	Transmissive (Pre-wired)				*Detachable connector Reflective		
							
Mounting Type	Screw-mounting	Screw-mounting	Screw-mounting	Screw-mounting	Surface Mount	Surface Mount	Board Mount
Sensing distance	3.2mm	3.4mm	3.4mm	9.5mm	1mm	3.0mm	3.5mm
Output Configuration ^{*2}	PTTr/P-IC	PTTr/P-IC	PTTr/P-IC	PTTr/P-IC	PTTr	PTTr	PTTr
Aperture Size	0.5mm	0.5mm	0.5mm	0.5mm	–	–	–
Dimensions (L×W×H)	12.95×23.7×12.7	25×6×10	25×6×10	31.75×6×15.5	3.2×1.7×1.1	4.0×3.0×2.0	14×4.2×3
Features	Dust-proof	General purpose	Horizontal aperture	Wide slot	Super miniature	Super miniature	Thin

*1 EE-SX3~... Dark ON, EE-SX4~... Light ON *2 PTTr... Photo-transistor, P-IC ... Photo-IC *3 With a positioning boss... EE-SX199 *4 High-speed response type... EE-SX1330-2

Transmissive
Types



Reflective
Types



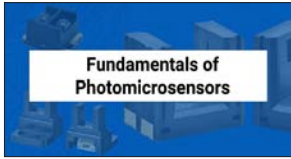
EE-SX3163 /4163-P1,P2	EE-SX3164 /4164-P1,P2	EE-SX460-P1	EE-SX461-P11	EE-SX3009-P1, 4009-P1	For connector models Accessories	EE-SX1018	EE-SX1103	EE-SX1105
Transmissive (Connectors)					Connector with cable (Order separately)	Transmissive (Terminal)		
M2 Screw-mounting	M2 Screw-mounting	Snap-in	Snap-in	Screw-mounting	EE-1005 Tyco Electronics Length: 1m	Board Mount	Board Mount	Board Mount
5mm	5mm	5mm	15mm	5mm		2mm	2mm	2mm
P-IC	P-IC	P-IC	P-IC	P-IC	EE-5002 JST Length: 1m	PTr	PTr	PTr
0.5mm	0.5mm	0.5mm	2mm	0.5mm		0.5mm	0.4mm	0.4mm
13.6×13.3×14.7	22.6×8.3×14	30×11×23.6	32.5×12×23.6	34×11×21		8×4×6	5×4.2×5.2	4.9×2.6×3.3
Connector with lock	Connector with lock	High resolution Detachable	Wide slot Detachable	High resolution		Miniature	Super miniature	Super miniature

EE-SX1041	EE-SX1042	EE-SX1035	EE-SX1070 /3070,4070	EE-SX1140	EE-SV3	EE-SX1088 /3088,4088	EE-SX1096	EE-SG3
Transmissive (Terminal)								
Board Mount	Board Mount	Board Mount	Board Mount	Board Mount	Screw-mounting	Screw-mounting	Screw-mounting	Screw-mounting
5mm	5mm	5.2mm	8mm	14mm	3.4mm	3.4mm	3.4mm	3.6mm
PTr	PTr	PTr	PTr/P-IC	PTr	PTr	PTr/P-IC	PTr	PTr
0.5mm	0.5mm	1mm	0.5mm	1.5mm	0.2/0.5/1mm	0.5mm	0.5mm	2mm
14×6×10	14×5×14.5	12.6×6.3×6.9	17.7×6×10	23×5×16.3	15.1×19×10.4	25×6×10	25×6×10	25.4×6.35×11.7
With a positioning boss	High profile Without a positioning boss	Small with wide slot	Wide slot With a positioning boss	Wide slot	High resolution	General purpose	Horizontal aperture	Dust-proof

EE-SY169, 169A,169B	EE-SY110 /310,410	EE-SF5, SF5-B
Reflective		
Board Mount	Board Mount	Board Mount
4mm	5mm	5mm
PTr	PTr/P-IC	PTr
–	–	–
12.5×6×8	12×4.6×4.8	13×5.7×8
Red LED, A: General purpose, B: Red LED, high output	General purpose	Dust-proof

Product images do not represent actual size ratio.


Related information




**Fundamentals of
Photomicrosensors**

Fundamentals of
Photomicrosensors

Useful information
for designers






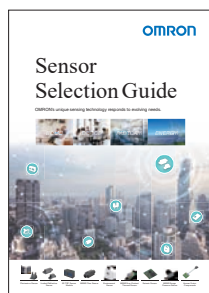
**Photomicrosensor
Application Guide**

Photomicrosensor
Application Guide

Specific examples
of applications, etc.



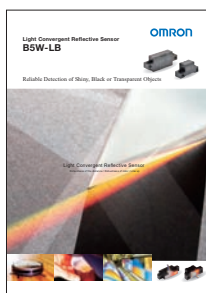
Related information



Sensor Selection Guide



Cat. No.
Y232-E1



Light Convergent Reflective Sensor



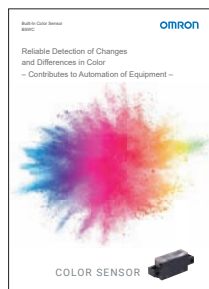
Cat. No.
E589-E1



3D TOF Sensor Module



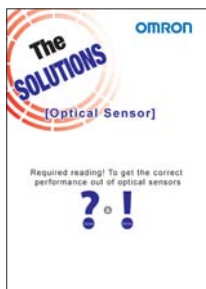
Cat. No.
E598-E1



Color Sensor



Cat. No.
E611-E1



The Solutions: Optical Sensor Edition



Cat. No.
E614-E1

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