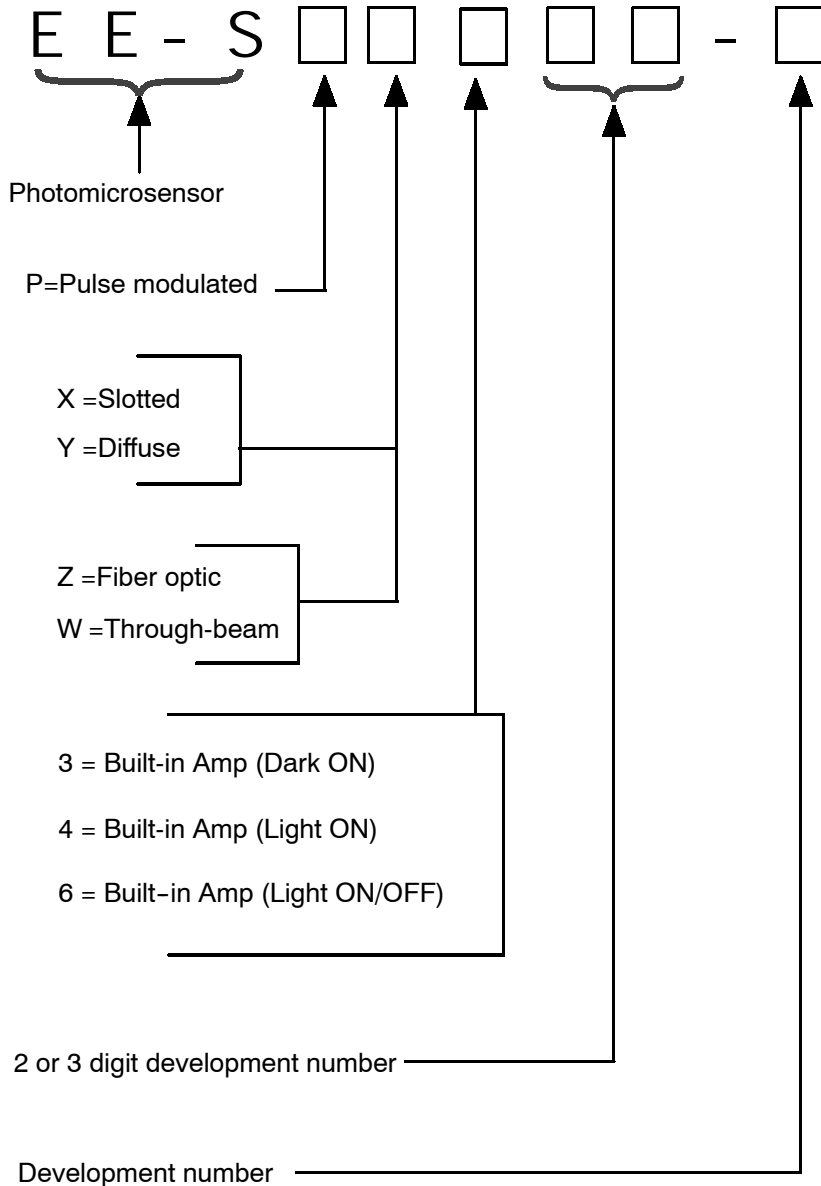


# Introduction

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The tables on the following pages provide information to assist in your selection of the Omron photomicrosensor that best meets your requirements. The part number key on this page provides a breakdown of component information included in the part number itself. For example, if your requirements call for a photomicrosensor that is pulse-modulated and slotted, you would limit your search to the EE-SPX numbers, and use the tables to find specific information about slot width, dimensions, and modulation types.



# Amplified Photomicrosensors

## ■ SLOT (TRANSMISSIVE)



Slot width	Appearance and dimensions (mm)	Model	Output	Optical modulation	Aperture width (mm) and orientation	Page
3.6 mm		EE-SPX740	Dark-ON	Modulated		24
		EE-SPX840	Light-ON			24
		EE-SPX301	Dark-ON			58
		EE-SPX401	Light-ON			58
		EE-SPX306-W2A	Dark-ON			30
		EE-SPX406-W2A	Light-ON			30
		EE-SPX742	Dark-ON			24
		EE-SPX842	Light-ON			24
		EE-SPX302-W2A	Dark-ON			30
		EE-SPX402-W2A	Light-ON			30
		EE-SPX743	Dark-ON			24
		EE-SPX843	Light-ON			24
		EE-SPX304-W2A	Dark-ON			30
		EE-SPX404-W2A	Light-ON			30
5.0 mm		EE-SPX741	Dark-ON	24		
		EE-SPX841	Light-ON	24		
		EE-SPX305-W2A	Dark-ON	30		
		EE-SPX405-W2A	Light-ON	30		
13.0 mm		EE-SPX303	Dark-ON	54		
		EE-SPX303-1		54		
		EE-SPX403	Light-ON	54		

(This table continues on the next page.)

Slot (transmissive) - continued from previous page

Slot width	Appearance and dimensions (mm)	Model	Output	Optical modulation	Aperture width (mm) and orientation	Page	
5.0 mm		EE-SX670	Light-ON/Dark-ON	Non-modulated		38	
		EE-SX670A				46	
		EE-SX470	Light-ON			38	
		EE-SX671	Light-ON/Dark-ON			38	
		EE-SX671A				46	
		EE-SX471	Light-ON			38	
		EE-SX672	Light-ON/Dark-ON			38	
		EE-SX672A				46	
		EE-SX472	Light-ON			38	
		EE-SX673	Light-ON/Dark-ON			38	
		EE-SX673A				46	
		EE-SX473	Light-ON			38	
		EE-SX674	Light-OFF/ON			38	
		EE-SX674A				46	
		EE-SX474	Light-ON			38	
		EE-SX770	Dark-ON			Light-ON	34
		EE-SX770A					
		EE-SX870					
		EE-SX870A					
		EE-SX771	Dark-ON			Light-ON	34
EE-SX771A							
EE-SX871							
EE-SX871A							
	EE-SX772	Dark-ON	Light-ON	34			
	EE-SX772A						
	EE-SX872						
	EE-SX872A						

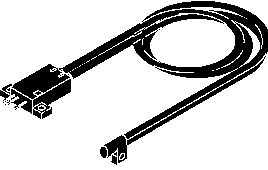

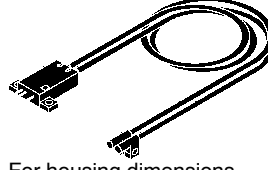
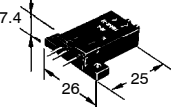


Sensing distance	Sensing method	Appearance and dimensions (mm)	Model	Output	Optical modulation	Features	Page	
5.0 mm	Diffuse reflective	Horizontal model EE-SPY301	EE-SPY301	Dark-ON	Modulated	Wide operating voltage range (5 to 24 VDC) Built-in LED indicator Control output: 80 mA	64	
			EE-SPY401	Light-ON			64	
		Vertical model EE-SPY302	EE-SPY302	Dark-ON			64	
			EE-SPY402	Light-ON			64	
1 to 5 mm	Convergent reflective	Horizontal model EE-SY671	EE-SY671	Light-ON/Dark-ON	Non-modulated	Built-in sensitivity adjuster Wide operating voltage range (5 to 24 VDC) Output mode selectable	72	
			EE-SY672	Light-ON/Dark-ON			72	
		EE-SB5M	EE-SB5M	Light-ON			Incorporated filter cuts off visible light	68
			EE-SB5MC	Dark-ON				68
			EE-SB5V	Light-ON				68
			EE-SB5VC	Dark-ON				68
			EE-SB5V-E	Light-ON				68
19 mm (3/4")					Sensitivity adjustment terminals incorporated	68		
2 to 6 mm (approx. 1/4")	Convergent reflective	Horizontal model EE-SPY311	EE-SPY311	Dark-ON	Modulated	Detects objects against mirror-like surfaces at a distance of 20 mm or more. Detects minute or black objects.	76	
			EE-SPY411	Light-ON			76	
		Vertical model EE-SPY312	EE-SPY312	Dark-ON			76	
			EE-SPY412	Light-ON			76	
200 mm	Diffuse retro-reflective	EE-SPZ301-A	EE-SPZ301-A	Dark-ON		Long-distance detection with the E39-R1 Reflector	80	
			EE-SPZ401-A	Light-ON			80	

Note: The maximum detectable distance of each reflective photomicrosensor is based on detecting a piece of white paper with a reflection factor of 90%.

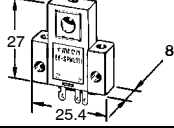
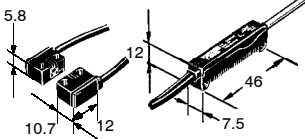
## ■ FIBER-OPTIC



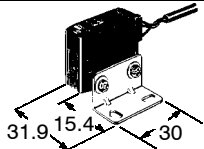
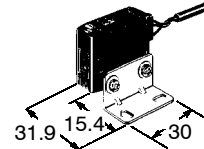
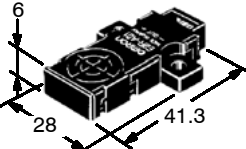
Sensing distance	Sensing method	Appearance and dimensions (mm)	Model	Output	Optical modulation	Features	Page
1 to 3 mm	Reflective	 <p>For housing dimensions, see EE-SPZ301/SPZ401 below.</p>	EE-SPZ301Y-01	Dark-ON	Modulated	Wide operating voltage range (5 to 24 VDC) Built-in LED indicator Control output: 80 mA	112
			EE-SPZ401Y-01	Light-ON			112
5.0 mm	Transmissive	 <p>For housing dimensions, see EE-SPZ301/SPZ401 below.</p>	EE-SPZ301W-02	Dark-ON			112
			EE-SPZ401W-02	Light-ON			112
30.0 mm		 <p>For housing dimensions, see EE-SPZ301/SPZ401 below.</p>	EE-SPZ301W-01	Dark-ON			112
			EE-SPZ401W-01	Light-ON			112
Transmissive: 150 mm Reflective: 1 to 6 mm	Standard fiber connection		EE-SPZ301	Dark-ON		Standard E32 series fibers (with length adjustable) can be connected.	108
			EE-SPZ401	Light-ON			108

## ■ THROUGH-BEAM

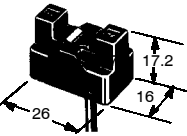
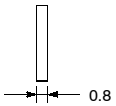


Sensing distance	Appearance and dimensions (mm)	Model	Output	Optical modulation	Detectable object (mm)	Page	
1 m		EE-SPW311	Dark-ON	Modulated	Opaque: 5 dia. min.	86	
		EE-SPW411	Light-ON			86	
30 cm		EE-SPW321(-A)	Dark-ON			Opaque: 2 dia. min.	90
		EE-SPW421(-A)	Light-ON				90

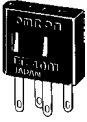
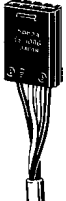
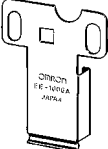

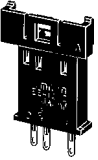

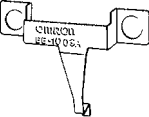

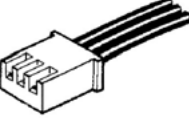
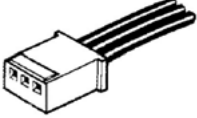
# Specialty Photomicrosensors

Sensing Distance	Sensing Method	Appearance and dimensions (mm)	Model	Output	Optical modulation	Features	Page
4 mm	Reflective		Z4D-F04A	Analog	Non-modulated	Resolution down to 5 μm.	102
4 mm	Reflective		Z4D-F04D	ON/OFF		Resolution down to 5 μm.	102
5 mm	Inductive sensing (unshielded)		E2R-A01	NPN open collector	None	High response frequency of 5 kHz minimum.	98

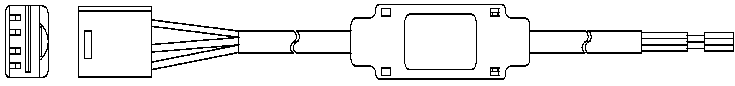
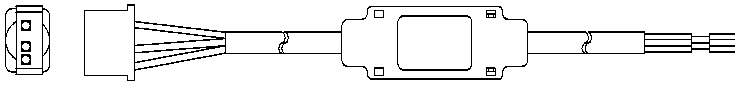
## ■ LIQUID LEVEL SENSOR

Slot width	Appearance and dimensions (mm)	Model	Output	Optical modulation	Aperture width (mm) and orientation	Page
13.0 mm		EE-SPX613	Light-ON/Dark-ON	Modulated		96

## CONNECTORS

Model	Appearance	Applicable sensors
EE-1001		EE-SX470/470P/670/670P EE-SX471/471P/671/671P EE-SX472/472P/672/672P EE-SX473/473P/673/673P EE-SX474/474P/674/674P EE-SX670A/670R EE-SX671A/671R EE-SX672A/672R EE-SX673A/673R EE-SX674A/674R EE-SPX303/303-1/403 EE-SY671/672 EE-SB5M(C)/SB5V(C) EE-SB5V-E EE-SPY311/411/312/412 EE-SPW311/411
EE-1006	 The connector incorporates a 2-m wire harness.	EE-SX470/470P/670/670P EE-SX471/471P/671/671P EE-SX472/472P/672/672P EE-SX473/473P/673/673P EE-SX474/474P/674/674P EE-SX670A/670R EE-SX671A/671R EE-SX672A/672R EE-SX673A/673R EE-SX674A/674R EE-SPX303/303-1/403 EE-SY671/672 EE-SB5M(C)/SB5V(C) EE-SB5V-E EE-SPY311/411/312/412 EE-SPW311/411
EE-1006A Connector Holder		When using the EE-1006 connector
EE-1006D, 1006L	 The connector incorporates a 2-m wire harness.	EE-SPW311/411
EE-1002		EE-SPX301/-SPX401, EE-SPY301/-SPY401, EE-SPY302/-SPY402, EE-SPZ301-A/-SPZ401-A, EE-SPZ301Y-01/-SPZ401Y-01, EE-SPZ301W-01/-SPZ401W-01, EE-SPZ301W-02/-SPZ401W-02, EE-SPZ301/-SPZ401
EE-1003	 The connector incorporates a 1-m wire harness.	
EE-1003A Connector Holder		
EE-1010D		Z4D
EE-1013		EE-SPX740/840
E22-01		E2R-A01

## ■ NPN-PNP OUTPUT CONVERTER

Model	Appearance	Applicable sensor	Page
EE-2001		EE-SPX301, EE-SPX401, EE-SPY301, EE-SPY401, EE-SPY302, EE-SPY402 EE-SPZ301-A, EE-SPZ401-A, EE-SPZ301Y-01, EE-SPZ401Y-01, EE-SPZ301W-01 EE-SPZ401W-01 EE-SPZ301W-02, EE-SPZ401W-02, EE-SPZ301, EE-SPZ401	120
EE-2002		EE-SX670, EE-SX670-A, EE-SX671, EE-SX671-A, EE-SX672, EE-SX672-A, EE-SX673, EE-SX673-A, EE-SX470, EE-SX471, EE-SX472, EE-SX473, EE-SPY311, EE-SPY312, EE-SPY411, EE-SPY412, EE-SY671, EE-SY672, EE-SPX303, EE-SPX403, EE-SPW311, EE-SPW411, EE-SB5V, EE-SB5V-E, EE-SB5VC, EE-SB5M, EE-SB5MC	120