

# E3FA/E3RA PHOTOELECTRIC SENSORS

The next generation in sensing performance



**M18  
Plastic  
Housing**

- » Simplicity in setup & installation
- » Standard & special applications
- » Robust waterproof housing

# E3FA/E3RA Series – The All-Application Sensor

Omron's next generation of photoelectric sensors represents one of the largest varieties of dependable and easy-to-use photoelectric sensors on the market. Regardless of your industry or application, the E3FA/E3RA series is the right sensor for the job.

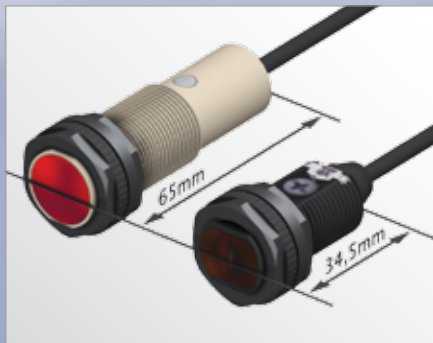
## Key Features

- » Universal M18 cylindrical plastic housing in straight or 90° angled (radial) models
- » Rugged IP67, IP69K housing withstands high-pressure and high-temperature wash down
- » Bright LED indicators provide status visibility from almost any angle
- » High power red LED for easy sensor alignment and dependable outputs in dusty environments
- » High EMC protection and ambient light immunity for detection stability in environments with excess noise or background light
- » Compact size and shape for increased installation flexibility



Full line-up of sensors to increase mounting flexibility and meet the needs of a wide range of applications.

## Unrivaled Detection with Simplicity in Setup and Installation



The short body of the E3FA/E3RA fits in tighter mounting spaces.



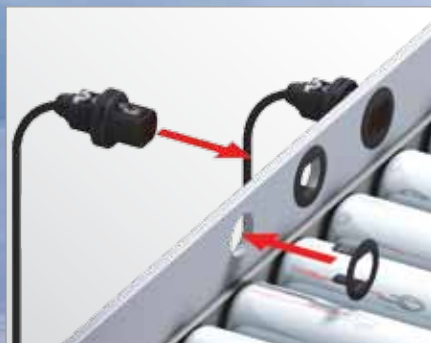
Visible red LED light for easy alignment.



Transparent object detection sensors utilize Omron's unique technology for detecting objects with birefringent (double refraction) properties.



Bright LED indicators for status visibility and large sensor adjusters for use with a standard size screwdriver.



Flush, snap mounting option for quick and easy installation.



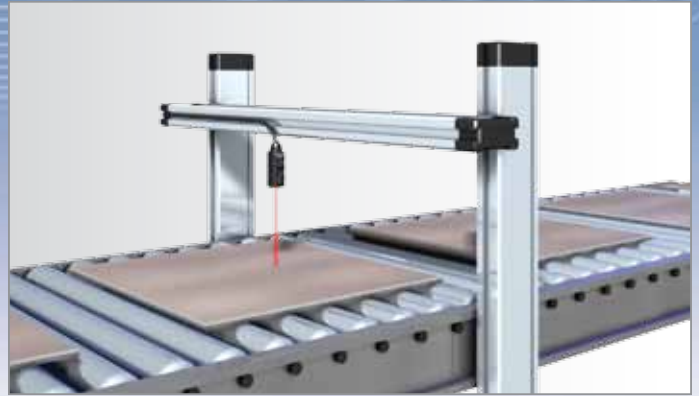
High power LED to compensate for dirt and misalignment.

# One Family for All Applications

## Special Models

The E3FA series includes special models to solve challenging applications.

- » Background Suppression
- » Limited Distance Detection
- » Transparent Object Detection



Background suppression sensors for stable detection independent of color or background.

## Ordering Information

Setup	Sensor type	Sensing distance	PNP		NPN	
			Pre-wired (2m)	M12 connector	Pre-wired (2m)	M12 connector
Straight	Through-beam *1	20m	E3FA-TP11 2M	E3FA-TP21	E3FA-TN11 2M	E3FA-TN21
	Retro-reflective (using reflector E39-R1S sold separately.)	0.1 to 4m	E3FA-RP11 2M	E3FA-RP21	E3FA-RN11 2M	E3FA-RN21
	Retro-reflective (coaxial) (using reflector E39-R1S sold separately.)	0 to 500mm	E3FA-RP12 2M	E3FA-RP22	E3FA-RN12 2M	E3FA-RN22
	Diffuse-reflective	100mm	E3FA-DP11 2M	E3FA-DP21	E3FA-DN11 2M	E3FA-DN21
		300mm	E3FA-DP12 2M	E3FA-DP22	E3FA-DN12 2M	E3FA-DN22
		1m	E3FA-DP13 2M	E3FA-DP23	E3FA-DN13 2M	E3FA-DN23
Special Applications	BGS (Background suppression)	100mm	E3FA-LP11 2M	E3FA-LP21	E3FA-LN11 2M	E3FA-LN21
		200mm	E3FA-LP12 2M	E3FA-LP22	E3FA-LN12 2M	E3FA-LN22
	Limited distance reflective	10 to 50mm	E3FA-VP11 2M	E3FA-VP21	E3FA-VN11 2M	E3FA-VN21
	Transparent detection (using reflector E39-RP1 sold separately.)	100 to 500mm	E3FA-BP11 2M	E3FA-BP21	E3FA-BN11 2M	E3FA-BN21
		0.1 to 2m	E3FA-BP12 2M	E3FA-BP22	E3FA-BN12 2M	E3FA-BN22
Radial	Through-beam *1	15m	E3RA-TP11 2M	E3RA-TP21	E3RA-TN11 2M	E3RA-RN21
	Retro-reflective (using reflector E39-R1S sold separately.)	0.1 to 3m	E3RA-RP11 2M	E3RA-RP21	E3RA-RN11 2M	E3RA-RN21
	Diffuse-reflective	100mm	E3RA-DP11 2M	E3RA-DP21	E3RA-DN11 2M	E3RA-DN21
		300mm	E3RA-DP12 2M	E3RA-DP22	E3RA-DN12 2M	E3RA-DN22
700mm		E3RA-DP13 2M	E3RA-DP23	E3RA-DN13 2M	E3RA-DN23	

\*1 The set type includes the emitter and receiver.

Note: All sensors are 10-30 VDC. Light-On/Dark-On selectable by wiring.





Use this document as a guide to find the right E3FA/E3RA sensor for your application. Enter the **Quick Link Code** in the Search Center of the Omron website ([www.omron247.com](http://www.omron247.com)) to download comprehensive E3FA/E3RA product documentation such as datasheets, brochures, manuals and CAD files.

# Accessories

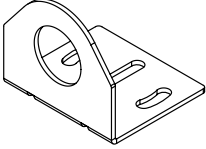

## Reflectors

Reflectors required for Retro-reflective Sensors: A Reflector is not provided with the Sensor. Be sure to order a Reflector separately.

Sensor	Sensing distance	Appearance	Model	Quantity	Remarks
E3FA-R□1	0.1 to 4 m		E39-R1S	1	for E3FA-R□ and E3RA-R□
E3FA-R□2	0 to 500 mm				
E3FA-B□1	100 to 500 mm		E39-RP1	1	for E3FA-B□
E3FA-B□2	0.1 to 2 m				



## Mounting Brackets

A Mounting Bracket is not included with the Sensor. Order a Mounting Bracket separately if required.

Sensor	Appearance	Model (Material)	Quantity	Remarks
All types		E39-L183 (SUS304)	1	Mounting bracket
		E39-L182 (POM)	1	Flush mounting bracket

## Sensor I/O connectors

Models for Connectors: A Connector is not provided with the Sensor. Be sure to order a Connector separately.

Sensor	Size	Cable	Appearance	Cable Type	Remarks	
All types	M12	Standard	Straight 	2 m	4-wire XS2F-M12PVC4S2M	
				5 m		XS2F-M12PVC4S5M
			Angle 	2 m		XS2F-M12PVC4A2M
				5 m		XS2F-M12PVC4A5M

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[E3FA-BP21](#) [E3FA-BP22](#) [E3FA-DN11 2M](#) [E3FA-DN12 2M](#) [E3FA-DN13 2M](#) [E3FA-DN21](#) [E3FA-DN22](#) [E3FA-DN23](#)  
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[TN21](#) [E3FA-TP11 2M](#) [E3FA-TP21](#) [E3FA-VN11 2M](#) [E3FA-VN21](#) [E3FA-VP11 2M](#) [E3FA-VP21](#) [E3RA-DN11 2M](#)  
[E3RA-DN12 2M](#) [E3RA-DN13 2M](#) [E3RA-DN21](#) [E3RA-DN22](#) [E3RA-DN23](#) [E3RA-DP11 2M](#) [E3RA-DP12 2M](#) [E3RA-](#)  
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[DP13-F22M](#) [E3FA-LP12-F22M](#) [E3FA-RP115M](#)