PHOTOELECTRIC SENSORS

E3FA/E3RA/E3FB/E3RB

A new generation in sensing performance

- Simplicity
  - Simple selection
  - Simple installation
- One family for all
  - All standard applications covered
  - A wide variety of models
  - Models designed for special applications
- Non-stop detection
  - High quality and reliability
  - High EMC protection
  - High light immunity
  - Robust and waterproof housing

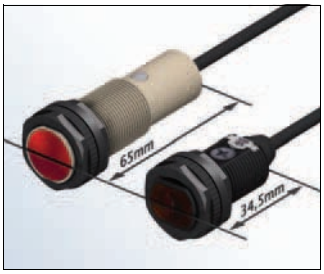
⚠ **Refer to *Safety Precautions* on page 15.**

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

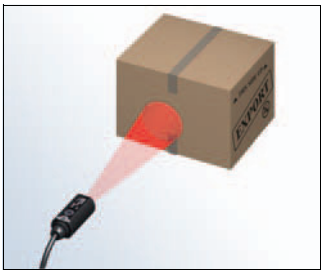
Features

Simplicity

Omron's compact E3FA series of photoelectric sensors is simple and quick to mount, as well as easy and intuitive to set-up.
The large and robust adjuster makes life much easier for installers to adjust the sensor, as does the bright, high-power red LED, which is clearly visible for easy alignment, even over longer distances. Similarly, the sensor's LED status indicator can be viewed from long distances and wide angles.

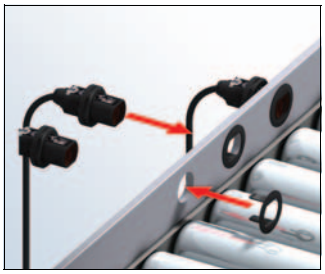


Compact size and shape. Can be installed almost anywhere.



Visible LED light for easy alignment.

Bright LED indicators for the easy operational status checking.



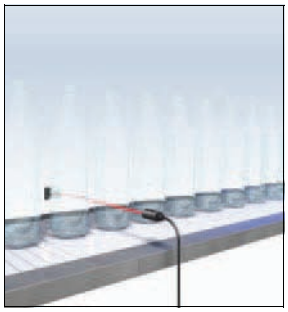
Flush mounting option for smooth installation.

One family for all

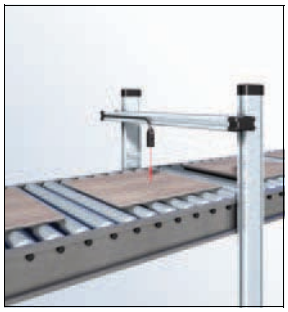
Typically installed in industrial plants ranging from food and beverage, textiles, ceramics and brick production, through to logistics, there's always an E3FA model to fit your application.
This extensive photoelectric sensor series with high reliability and enhanced performance includes through-beam, retroreflective and diffuse-reflective types in straight and radial versions. Straight versions are also available with background-suppression, limited-reflective detection, and transparent object detection types for special applications.

Application specific models

Limited-reflective types suitable for detecting transparant film to shiny, mirror film.



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



Background suppression types for the stable detection of different objects with various colours.

Non-stop detection

Especially designed for machines that never stop, the rugged E3FA series offers completely reliable sensing in a robust and waterproof housing that can withstand even high-pressure cleaning. Exceeding market standards, this series also has high EMC protection and light immunity. In addition, there is the added benefit of the high-power LED, which contributes to high sensing stability even in environments with dust or vibrations.

Ordering Information

Sensors (E3FA Plastic housing) [Refer to *Dimensions on page 16.*]

Red light Infrared light

Sensor type	Sensing distance	Connection method	Model	
			NPN output	PNP output
Through-beam *1.	20 m	pre-wired	**set E3FA-TN11 2M** Emitter E3FA-TN11-L 2M Receiver E3FA-TN11-D 2M	**set E3FA-TP11 2M** Emitter E3FA-TP11-L 2M Receiver E3FA-TP11-D 2M
		M12 connector	**set E3FA-TN21** Emitter E3FA-TN21-L Receiver E3FA-TN21-D	**set E3FA-TP21** Emitter E3FA-TP21-L Receiver E3FA-TP21-D
	15 m	pre-wired	**set E3FA-TN12 2M** Emitter E3FA-TN12-L 2M Receiver E3FA-TN12-D 2M	**set E3FA-TP12 2M** Emitter E3FA-TP12-L 2M Receiver E3FA-TP12-D 2M
		M12 connector	**set E3FA-TN22** Emitter E3FA-TN22-L Receiver E3FA-TN22-D	**set E3FA-TP22** Emitter E3FA-TP22-L Receiver E3FA-TP22-D
Retro-reflective with MSR function *2.	0.1 to 4 m with E39-R1S	pre-wired	**E3FA-RN11 2M**	**E3FA-RP11 2M**
		M12 connector	**E3FA-RN21**	**E3FA-RP21**
Coaxial Retro-reflective with MSR function *2.	0 to 500 mm with E39-R1S	pre-wired	**E3FA-RN12 2M**	**E3FA-RP12 2M**
		M12 connector	**E3FA-RN22**	**E3FA-RP22**
Diffuse-reflective	100 mm	pre-wired	**E3FA-DN11 2M**	**E3FA-DP11 2M**
		M12 connector	**E3FA-DN21**	**E3FA-DP21**
	300 mm	pre-wired	**E3FA-DN12 2M**	**E3FA-DP12 2M**
		M12 connector	**E3FA-DN22**	**E3FA-DP22**
	1 m	pre-wired	**E3FA-DN13 2M**	**E3FA-DP13 2M**
		M12 connector	**E3FA-DN23**	**E3FA-DP23**
	100 mm	pre-wired	**E3FA-DN14 2M**	**E3FA-DP14 2M**
		M12 connector	**E3FA-DN24**	**E3FA-DP24**
	300 mm	pre-wired	**E3FA-DN15 2M**	**E3FA-DP15 2M**
		M12 connector	**E3FA-DN25**	**E3FA-DP25**
	1 m	pre-wired	**E3FA-DN16 2M**	**E3FA-DP16 2M**
		M12 connector	**E3FA-DN26**	**E3FA-DP26**
BGS (background suppression)	100 mm	pre-wired	**E3FA-LN11 2M**	**E3FA-LP11 2M**
		M12 connector	**E3FA-LN21**	**E3FA-LP21**
	200 mm	pre-wired	**E3FA-LN12 2M**	**E3FA-LP12 2M**
		M12 connector	**E3FA-LN22**	**E3FA-LP22**
Limited distance reflective	10 to 50 mm	pre-wired	**E3FA-VN11 2M**	**E3FA-VP11 2M**
		M12 connector	**E3FA-VN21**	**E3FA-VP21**
Transparent detected with P-opaquing function *2.	100 to 500 mm with E39-RP1	pre-wired	**E3FA-BN11 2M**	**E3FA-BP11 2M**
		M12 connector	**E3FA-BN21**	**E3FA-BP21**
Transparent detected with P-opaquing function *2.	0.1 to 2 m with E39-RP1	pre-wired	**E3FA-BN12 2M**	**E3FA-BP12 2M**
		M12 connector	**E3FA-BN22**	**E3FA-BP22**

*1. The set type includes the emitter and receiver.
*2. The Reflector is sold separately. Select the Reflector model most suited to the application.