

Transparent Object Detection Photoelectric Sensor E3S-DB

Superb Detection of Many Types of Transparent Objects



- Double slits inside Sensor prevent incorrect operation.
- P-opaquin function* improves detection of PET bottles and transparent films.
- Smart Teaching for optimum settings in as little as 3 seconds.
- Maximum sensing distance of 3.5 m.
- IP69K protection recommended for food and beverage industry. Third-party certification from Ecolab in Europe for detergent resistance.
- Variable connector and cable directions, and 360° indicators for greater usability.



* This function uses polarization to opaque transparent objects that exhibit double refraction.



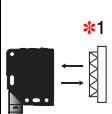
Refer to the **Safety Precautions** on page 7.

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

Ordering Information

Sensors (Refer to **Dimensions** on page 8.)

 Red light

Sensing method	Appearance	Sensitivity adjustment	Connection method	Sensing distance *2	Model	
					NPN output	PNP output
Retro-reflective (with MSR function)		Smart Teaching	Pre-wired (2 m)	 3.5 m	E3S-DBN11 2M	E3S-DBP11 2M
			Connector (M12)		E3S-DBN21	E3S-DBP21
			M12 Smartclick pre-wired connector (0.3 m)		E3S-DBN31 0.3M	E3S-DBP31 0.3M
			Pre-wired (2 m)	 Narrow beam 0.5 m	E3S-DBN12 2M	E3S-DBP12 2M
			Connector (M12)		E3S-DBN22	E3S-DBP22
			M12 Smartclick pre-wired connector (0.3 m)		E3S-DBN32 0.3M	E3S-DBP32 0.3M
		Eleven-turn adjuster	Pre-wired (2 m)	 3.5 m	E3S-DBN11T 2M	E3S-DBP11T 2M
			Connector (M12)		E3S-DBN21T	E3S-DBP21T
			M12 Smartclick pre-wired connector (0.3 m)		E3S-DBN31T 0.3M	E3S-DBP31T 0.3M
			Pre-wired (2 m)	 Narrow beam 0.5 m	E3S-DBN12T 2M	E3S-DBP12T 2M
			Connector (M12)		E3S-DBN22T	E3S-DBP22T
			M12 Smartclick pre-wired connector (0.3 m)		E3S-DBN32T 0.3M	E3S-DBP32T 0.3M

*1. A Reflector is not included with the Sensor. Select a Reflector (sold separately) according to the application.

*2. There is no close-range dead zone between the Sensor and Reflector.

Accessories (Sold Separately)

Sensor I/O Connectors (Connector on One End) (A Connector is required for a Sensor with a connector or pre-wired connector.)
Connectors are not provided with the Sensors. Be sure to order a Connector separately.

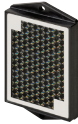
Size	Cable specifications	Appearance	Cable length	Model
*1 M12 (4 pins)	Fire-retardant robot cable	Straight  *2	2 m	XS2F-D421-D80-F
			5 m	XS2F-D421-G80-F
		Straight  *2	2 m	XS5F-D421-D80-F
			5 m	XS5F-D421-G80-F

*1 Refer to your OMRON website for details on the XS2 and XS5.

*2 The connectors will not rotate after they are connected.

Reflectors (A Reflector is required for each Retro-reflective Sensor.) (Refer to *Dimensions* on page 10.)

Reflectors are not provided with the Sensors. Be sure to order a Reflector separately.

Appearance	Sensing distance* (reference value)	Model	Quantity	Applicable Sensors	Remarks
	3.5 m	E39-R1S	1	E3S-DB□□1(T)	Standard model
	2 m	E39-R1K		E3S-DB□□1(T)	Non-fogging reflective plate
	3 m	E39-RP1		E3S-DB□□1(T)	Special Polarizing Reflector
	0.5 m (rated value)	E39-R21		E3S-DB□□2(T)	Narrow-beam Reflector
	3.5 m (rated value)	E39-R8		E3S-DB□□1(T)	Standard model
	1.5 m	E39-RS10		E3S-DB□□1(T)	Sheets
	0.5 m			E3S-DB□□2(T)	
	2.5 m	E39-RS11		E3S-DB□□1(T)	
	0.5 m			E3S-DB□□2(T)	

Note: 1. If you use the Reflector at any distance other than the rated distance, make sure that the stability indicator lights properly when you install the Sensor.

2. Refer to *Engineering Data (Reference Value)* on page 4 for details.

* There is no close-range dead zone between the Sensor and Reflector.

Mounting Brackets (Refer to *Dimensions* on page 11.)

A Mounting Bracket is not provided with the Sensor. It must be ordered separately as required.

Type	Appearance	Model	Quantity
Bottom-mounting		E39-L192	1
Side-mounting		E39-L193	

Note: For details, refer to the *Mounting Brackets* on E39-L/E39-S/E39-R which can be accessed from your OMRON website.