

# Transparent Object Detection Photoelectric Sensor E3S-DB

## Superb Detection of Many Types of Transparent Objects



- Double slits inside Sensor prevent incorrect operation.
- P-opaqing 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.

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

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

## 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)		<b>E3S-DBN11 2M</b>	<b>E3S-DBP11 2M</b>		
			Connector (M12)		<b>E3S-DBN21</b>	<b>E3S-DBP21</b>		
			M12 Smartclick pre-wired connector (0.3 m)		(with E39-R8)	<b>E3S-DBN31 0.3M</b>	<b>E3S-DBP31 0.3M</b>	
			Pre-wired (2 m)			<b>E3S-DBN12 2M</b>	<b>E3S-DBP12 2M</b>	
			Connector (M12)			Narrow beam <b>0.5 m</b>	<b>E3S-DBN22</b>	<b>E3S-DBP22</b>
			M12 Smartclick pre-wired connector (0.3 m)			(with E39-R21)	<b>E3S-DBN32 0.3M</b>	<b>E3S-DBP32 0.3M</b>
		Eleven-turn adjuster	Pre-wired (2 m)			<b>E3S-DBN11T 2M</b>	<b>E3S-DBP11T 2M</b>	
			Connector (M12)			<b>E3S-DBN21T</b>	<b>E3S-DBP21T</b>	
			M12 Smartclick pre-wired connector (0.3 m)			(with E39-R8)	<b>E3S-DBN31T 0.3M</b>	<b>E3S-DBP31T 0.3M</b>
			Pre-wired (2 m)			<b>E3S-DBN12T 2M</b>	<b>E3S-DBP12T 2M</b>	
			Connector (M12)			Narrow beam <b>0.5 m</b>	<b>E3S-DBN22T</b>	<b>E3S-DBP22T</b>
			M12 Smartclick pre-wired connector (0.3 m)			(with E39-R21)	<b>E3S-DBN32T 0.3M</b>	<b>E3S-DBP32T 0.3M</b>

\*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.