

Distance-settable Photoelectric Sensor E3AS-L Series

Background suppression sensor for enhanced detection low-reflectivity objects

- Equipped with Omron's proprietary light emitting element for stable detection of low-reflective workpieces
- Teaching method allows anyone to set optimal threshold values
- Manufactured using Omron's proprietary laser sealing method (IP67/IP69K/IP67G *)
- Antifouling coating prevents contamination on the sensing surface
- IO-Link reduced time required for startups and changeovers

* Only for sensor units.



Refer to *Safety Precautions* on page 8.

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 9.]

Red light

Connection method	Sensing distance (white paper)	Output	Model		
		IO-Link baud rate	NPN output	PNP output	PNP output
			---	COM2 (38.4 kbps)	COM3 (230.4 kbps)
Pre-wired (2 m) ¹			E3AS-L200MN 2M	E3AS-L200MD 2M	E3AS-L200MT 2M
M8 Connector			E3AS-L200MN M3	E3AS-L200MD M3	E3AS-L200MT M3
M8 Pre-wired Connector			E3AS-L200MN-M3J 0.3M	E3AS-L200MD-M3J 0.3M	E3AS-L200MT-M3J 0.3M
M12 Pre-wired Connector ²			E3AS-L200MN-M1TJ 0.3M	E3AS-L200MD-M1TJ 0.3M	E3AS-L200MT-M1TJ 0.3M
Pre-wired (2 m) ¹			E3AS-L80MN 2M	E3AS-L80MD 2M	E3AS-L80MT 2M
M8 Connector			E3AS-L80MN M3	E3AS-L80MD M3	E3AS-L80MT M3
M8 Pre-wired Connector			E3AS-L80MN-M3J 0.3M	E3AS-L80MD-M3J 0.3M	E3AS-L80MT-M3J 0.3M
M12 Pre-wired Connector ²			E3AS-L80MN-M1TJ 0.3M	E3AS-L80MD-M1TJ 0.3M	E3AS-L80MT-M1TJ 0.3M

1. Models with 5-m cable length are also available with "5M" suffix. (Example: E3AS-L200MN 5M)

2. The Pre-wired Connector (M12) is Smartclick Connector.

E3AS-L Series

Accessories (Sold Separately)

Sensor I/O Connectors (Sockets on One Cable End)

(Models for Connectors / Pre-wired Connectors)

A Sensor I/O Connector is not provided with the Sensor. Order separately as needed.

Round Water-resistant Connectors XS3F-M8 series

Appearance	Cable specification	Cable diameter (mm)	No. of cable cores (Poles)	Cable connection direction	Cable length (m)	Sensor I/O Connector model number
M8 Connector	PVC cable	5 dia.	4	Straight	2	XS3F-M8PVC4S2M
Straight type					5	XS3F-M8PVC4S5M
				Right-angle	2	XS3F-M8PVC4A2M
					5	XS3F-M8PVC4A5M

Note: 1. The XS3W (Socket and Plug on Cable Ends) is also available. Refer to XS3W-M8/XS3F-M8 Series Datasheet (Cat. No. G140).

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

3. The cable is fixed at an angle of 180° from the sensor emitter/receiver surface.

Round Water-resistant Connectors XS5 series

Appearance	Cable specification	Cable diameter (mm)	Cable connection direction	Cable length (m)	Sensor I/O Connector model number
M12 Smartclick Connector	PVC robot cable	6 dia.	Straight	2	XS5F-D421-D80-F
Straight type				5	XS5F-D421-G80-F
			Right-angle	2	XS5F-D422-D80-F
				5	XS5F-D422-G80-F

Note: 1. The XS5W (Socket and Plug on Cable Ends) is also available. Refer to XS5 on your Omron website for details.

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

3. The cable is fixed at an angle of 180° from the sensor emitter/receiver surface.

Mounting Brackets [Refer to *Dimensions* on page 10.]

A Mounting Bracket is not enclosed with the Sensor. Order separately as needed.

Appearance	Model (material)	Applicable Sensor E3AS series			
		Pre-wired	M8 Pre-wired Connector	M12 Pre-wired Smartclick Connector	M8 Connector
L-shaped Mounting Bracket 	E39-L201 (SUS304)	Yes	Yes	Yes	---
Horizontal Protective Cover Bracket 	E39-L202 (SUS304)	Yes	Yes	Yes	---
Rear Mounting Bracket 	E39-L203 (SUS304)	Yes	Yes	Yes	Yes ²
Robust Mounting Bracket 	E39-L204 (SUS304)	Yes	Yes	Yes	---
L-shaped Mounting Bracket 	E39-L211 (SUS304)	--- ¹	--- ¹	--- ¹	Yes ³
Horizontal Protective Cover Bracket 	E39-L212 (SUS304)	--- ¹	--- ¹	--- ¹	Yes ³
Robust Mounting Bracket 	E39-L214 (SUS304)	--- ¹	--- ¹	--- ¹	Yes ³

1. Can be used for Pre-wired models, M8 Pre-wired Connector models, and M12 Pre-wired Smartclick Connector models. However, confirm the bracket shape in advance.
2. Confirm the installation environment and bracket shape of the Sensor I/O Connector to be connected.
3. Use an L-shaped Sensor I/O Connector. Straight types cannot be installed.

E3AS-L Series

Ratings and Specifications

Sensing method		Distance-settable	
Item	Model	E3AS-L200MN	E3AS-L80MN
	PNP output/ COM2	E3AS-L200MD	E3AS-L80MD
	PNP output/ COM3	E3AS-L200MT	E3AS-L80MT
Sensing distance		10 mm to the set distance (White paper or black paper 100 × 100 mm)	
Setting range		40 to 200 mm (White paper or black paper 100 × 100 mm)	20 to 80 mm (White paper or black paper 100 × 100 mm)
Spot diameter (reference value)		25 × 25 mm at distance of 200 mm	4 mm dia. (at distance of 80 mm)
Differential travel		10% max. of set distance	White paper: 2% max. of set distance Black paper: 5% max. of set distance
Reflectivity characteristic (black/white error)		10% max. of set distance	5% max. of set distance
Light source (wavelength)		Red LED (624 nm)	Red LED (650 nm)
Power supply voltage		10 to 30 VDC (including 10% ripple (p-p)), Class2	
Current consumption		35 mA max.	
Input/output	Control output		Load power supply voltage: 30 VDC max., Class2, Load current: 100 mA max. (Residual voltage: Load current of less than 10 mA: 1 V max. Load current of 10 to 100 mA: 2 V max.) Open-collector output (NPN/PNP output depending on model)
	NPN		OUTPUT 1: NO (Normally open), OUTPUT 2: NC (Normally closed)
	PNP/COM2 PNP/COM3		OUTPUT 1: NO (Normally open)/COM□, OUTPUT 2: NC (Normally closed)
Protection circuits		Power supply reverse polarity protection, Output short-circuit protection, and Output reverse polarity protection	
Response time		Operate or reset: 1 ms max.	
Distance setting		Teaching method/IO-Link communications	
Ambient illumination (Receiver side)		Incandescent lamp: 3,000 lx max., Sunlight: 10,000 lx max.	
Ambient temperature range		Operating: -25 to 55°C, Storage: -40 to 70°C (with no icing or condensation)	
Ambient humidity range		Operating: 35% to 85%, Storage: 35% to 95% (with no condensation)	
Insulation resistance		20 MΩ min. at 500 VDC	
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min	
Vibration resistance		10 to 55 Hz with a 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions	
Shock resistance		500 m/s ² for 3 times each in X, Y, and Z directions	
Degree of protection		IP67 (IEC60529) and IP67G ¹ (JIS C 0920 Annex 1), IP69K (ISO20653)	
Indicators		Operation indicator (orange), Stability & Communication indicator (green ²)	
Connection method		Pre-wired (standard cable length: 2 m), M8 Connector, M8 Pre-wired Connector (standard cable length: 0.3m), M12 Pre-wired Smartclick Connector (standard cable length: 0.3m)	
Weight (packed state/ Sensor only)	Pre-wired (2 m)	Approx. 135 g/approx. 90 g	
	M8 Connector	Approx. 75 g/approx. 30 g	
	M8 Pre-wired Connector (0.3 m)	Approx. 85 g/approx. 40 g	
	M12 Pre-wired Smartclick Connector (0.3m)	Approx. 95 g/approx. 50 g	
Materials	Case	Stainless steel (SUS316L)	
	Lens	Methacrylate resin (PMMA)	
	Display	Polyamide 11 (PA11)	
Main IO-Link functions		Operation mode switching between NO and NC, execution of teaching (2-point teaching, Background teaching), setup of the threshold, timer function of the control output and timer time selecting, Restore Factory Settings, Key Lock (Unlock, Lock, Lock (No Button))	
IO-Link Communication specifications	IO-Link specification	Ver. 1.1	
	Baud rate	COM2 (38.4 kbps), COM3 (230.4 kbps)	
	Data length	PD size: 1 byte, OD size: 1 byte (M-sequence type: TYPE_2_1)	
	Minimum cycle time	COM2: 3.5 ms, COM3: 1.2 ms	
Accessories		Instruction manual, compliance sheet and index list (attached for IO-Link type only), Note: Mounting Brackets must be ordered separately.	

1. The IP67G is the degree of protection which is defined according to the JIS (Japanese Industrial Standards).
The IP67 indicates the same level of protection as defined by the IEC, and the G indicates that a device has resistance to oil.
2. IO-Link Communication mode: blinking