










Mounting Brackets

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

Appearance	Model (material)	Quantity	Remarks	Appearance	Model (material)	Quantity	Remarks
	E39-L153 (SUS304) *1	1	Mounting Brackets		E39-L98 (SUS304) *2	1	Metal Protective Cover Bracket
	E39-L104 (SUS304) *1	1			E39-L150 (SUS304)	1	(Sensor adjuster)
	E39-L43 (SUS304) *2	1	Horizontal Mounting Brackets		E39-L151 (SUS304)	1	Easily mounted to the aluminum frame rails of conveyors and easily adjusted.
	E39-L142 (SUS304) *2	1	Horizontal Protective Cover Bracket				For left to right adjustment
	E39-L44 (SUS304)	1	Rear Mounting Bracket		E39-L144 (SUS304) *2	1	Compact Protective Cover Bracket (For E3Z only)

Note: 1. When using Through-beam models, order one bracket for the Receiver and one for the Emitter.

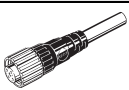

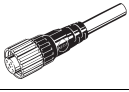




2. Refer to *Mounting Brackets on E39-L/E39-S/E39-R* on your OMRON website for details.

*1. Cannot be used for Standard Connector models with mounting surface on the bottom. In that case, use Pre-wired Connector models.

*2. Cannot be used for Standard Connector models.

Sensor I/O Connectors

(Models for Connectors and Pre-wired Connectors: A Connector is not provided with the Sensor. Be sure to order a Connector separately.)

Size	Type	Appearance	Cable length	Model
M12	Socket on one cable end	Smartclick connector Straight *2 	2 m	XS5F-D421-D80-F
			5 m	XS5F-D421-G80-F
		Smartclick connector L-shape *2 *3 	2 m	XS5F-D422-D80-F
			5 m	XS5F-D422-G80-F
	Socket and plug on cable ends *1	Smartclick connector Straight/ Straight *2 	2 m	XS5W-D421-D81-F
			5 m	XS5W-D421-G81-F
Smartclick connector L-shape/L-shape *2 *3 		2 m	XS5W-D422-D81-F	
		5 m	XS5W-D422-G81-F	
M8	Socket on one cable end	Straight *3 	2 m	XS3F-M421-402-A
			5 m	XS3F-M421-405-A
		L-shape *3 *4 	2 m	XS3F-M422-402-A
			5 m	XS3F-M422-405-A
M8 socket/ M12 plug	Socket and plug on cable ends	M8-M12 (Smartclick) conversion cable *2 	0.2 m	XS3W-M42C-4C2-A

Note: 1. When using Through-beam models, order one connector for the Receiver and one for the Emitter.

2. Refer to *Sensor I/O Connectors/Sensor Controllers* on your OMRON website for details.

*1. Straight type/L-shape type combinations are also available.

*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.

Ratings and Specifications

IO-Link Model

Model Item	Sensing method		Through-beam	Retro-reflective with MSR function	Diffuse-reflective	Narrow-beam Models
	PNP output	Pre-wired	E3Z-T81-IL□	E3Z-R81-IL□	E3Z-D82-IL□	E3Z-L81-IL□
		Pre-wired connector (M12)	E3Z-T81-M1TJ-IL□	E3Z-R81-M1TJ-IL□	E3Z-D82-M1TJ-IL□	E3Z-L81-M1TJ-IL□
	Connector (M8)	E3Z-T86-IL□	E3Z-R86-IL□	E3Z-D87-IL□	E3Z-L86-IL□	
Sensing distance		15 m	4 m (100 mm) * (when using E39-R1S) 3 m (100 mm) * (when using E39-R1)	1 m (white paper: 300 × 300 mm)	90 + 30 mm (white paper: 100 × 100 mm)	
Spot diameter (reference value)		---			2.5 dia. and sensing distance of 90 mm	
Standard sensing object		Opaque: 12-mm dia. min.	Opaque: 75-mm dia. min.	---		
Minimum detectable object (reference value)		---			0.1 mm (copper wire)	
Differential travel (representative example)		---	---	20% max. of setting distance	Refer to <i>Engineering data</i> on page 6.	
Directional angle		Both emitter and receiver: 3 to 15°	2 to 10°		---	
Light source (wavelength)		Infrared LED (870 nm)	Red LED (660 nm)	Infrared LED (860 nm)	Red LED (650 nm)	
Power supply voltage		10 to 30 VDC (including 10% ripple (p-p))				
Current consumption		50 mA max. (Emitter: 25 mA max., Receiver: 25 mA max.)	30 mA max.			
Control output		Load power supply voltage: 30 VDC max., 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. PNP open collector output Light-ON/Dark-ON selectable				
Indicators		In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and stability indicator (green, lit) In the IO-Link Mode: Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)				
Protection circuits		Reversed power supply polarity protection, output short-circuit protection, and reversed output polarity protection	Reversed power supply polarity protection, output short-circuit protection, reversed output polarity protection, and mutual interference prevention			
Response time		Operate or reset: 1 ms max.				
Sensitivity adjustment		Sensitivity adjuster / 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 (with no icing or condensation) 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		Destruction: 10 to 55 Hz, 1.5 mm double amplitude for 2 hours each in X, Y, and Z directions				
Shock resistance		Destruction: 500 m/s ² 3 times each in X, Y, and Z directions				
Degree of protection		IEC 60529 IP67				
Connection method		Pre-wired cable (standard cable length 2 m), M12 pre-wired connector (standard cable length 0.3 m), M8 connector				
Weight (packed state)	Pre-wired cable (2 m)	Approx. 120 g	Approx. 65 g			
	Pre-wired connector (M12)	Approx. 60 g	Approx. 30 g			
	Connector (M8)	Approx. 30 g	Approx. 20 g			
Material	Case	Polybutylene terephthalate (PBT)				
	Display	Modified polyarylate				
	Lens	Modified polyarylate	Methacrylate resin (PMMA)	Modified polyarylate		
Main IO-Link functions		Operation mode switching between Light ON and Dark ON, setup of the instability detection level for light receiving and non-light receiving, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting, setup of a teaching level and execution of teaching, setup of light receiving sensitivity level, monitor output, operating hours read-out, and initial reset				
Communication specifications	IO-Link specification	Ver 1.1				
	Baud rate	-IL3: COM3 (230.4 kbps), -IL2: COM2 (38.4 kbps)				
	Data length	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)				
	Minimum cycle time	-IL3 (COM3): 1 ms, -IL2 (COM2): 2.3 ms				
Accessories		Instruction manual (Neither Reflectors nor Mounting Brackets are provided with any of the above models.)				

* Values in parentheses indicate the minimum required distance between the Sensor and Reflector.