Laser sensor EX-L200 series

Amplifier Built-in Ultra-compact Laser Sensor Amplifier Built-in

EX-L200 series

FEATURES

EX-L200 laser sensors are made to detect minute objects with utmost accuracy. Despite its miniature size, the thru-beam type (EX-L211x) can detect minute objects with a diameter of just 0.3mm, and the spot reflective type EX-L221x can even detect gold wire whose diameter is a mere 0.01mm. To facilitate solving application tasks, the sensors come equipped with a potentiometer and two indicator LEDs. For the thru-beam type, reflective material on the receiver allows you to visualize the laser beam, easing beam-axis alignment.

- **Ultra-compact amplifier built-in:** Due to the customized IC and optical design, high precision detection is fulfilled with directivity and visibility achievable only by laser. The laser adopted is Class 1 (IEC / JIS / FDA) laser that is safe to use, so that there is no need to separate the areas of sensor usage.
- **Visible red laser diode :** Beam alignment is carried out by looking at the red spot reflected on the beam alignment screen to match with the actual object. The optimum position can be understood at a glance by looking at the beam alignment screen and stability indicator (green).
- **Response time just 0.5 ms :** Fastest response time of detection.
- **Flexible to use :** EX-L200 Series have 3 type to detect objects such as thru-beam, retroreflective and spot reflective types
- **IP67 degree of protection :** Red LED stronger for use in dust and dirt and some splashed water.
- **Minute detection (reflective) :** With a repeatability of 0.02mm the sensor is perfectly suited for positioning tasks.

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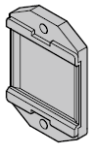
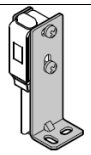
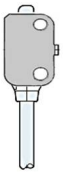
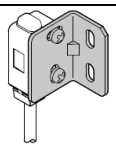
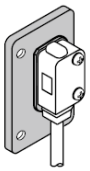
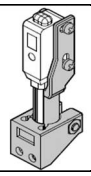
SPECIFICATIONS

Type		Appearance	Sensing range	Model no.		Emission spot size (Typical)	Sensitivity adjuster
				NPN Output	PNP Output		
Thru-beam	Minute object detection		1 m	EX-L211	EX-L211-P	Approx. 6 × 4 mm (at a sensing distance of 1 m)	Incorporated
	Long sensing range		3 m	EX-L212	EX-L212-P	Approx. 8 × 5.5 mm (at a sensing distance of 1 m)	--------
Retro reflective	Long sensing range		4 m	EX-L291	EX-L291-P	Approx. 6 × 4 mm (at a sensing distance of 1 m)	Incorporated
Spot reflective	Minute object detection		45 to 300 m	EX-L221	EX-L221-P	ø1 mm or less (at a sensing distance of 300 mm)	Incorporated
Convergent reflective	Spot		20 to 50 m (Convergent point: 22 mm)	EX-L261	EX-L261-P	ø1 mm or less (at a sensing distance of 50 mm	Incorporated
	Line spot		20 to 70 m (Convergent point: 22 mm)	EX-L262	EX-L262-P	Approx. 5 × 1 mm (at a sensing distance of 50 mm)	Incorporated

OPTIONS

- **Accessory**

Type	Appearances	Model no.	Description	
Reflector		RF-330	For retroreflective type sensor only	
Sensor mounting bracket		MS-EXL2-1	Foot angled mounting bracket	The thru-beam type sensor needs two brackets.
		MS-EXL2-2	Mounting plate (2 pcs.) For EX-L211☐/L212□	
		MS-EXL2-3	Mounting plate (1 pcs.) For EX-L291☐/L221☐/L26☐	
		MS-EXL2-5	Back angled mounting bracket	
		MS-EXL2-6	Compatible bracket for thru-beam type A bracket to easily mount EX-L21□ on the 25.4 mm pitch sensor mounting bracket: Use with the mounting plate attached to the sensor.	
Universal sensor mounting bracket		MS-EXL2-4	It can adjust the height and the angle of the sensor.	

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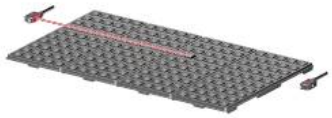
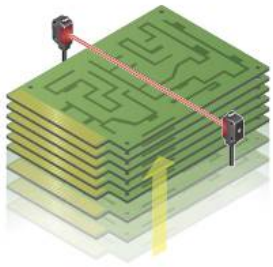
APPLICATIONS

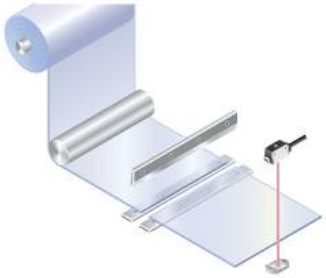
Detecting ICs that are out of position in multiple palettes



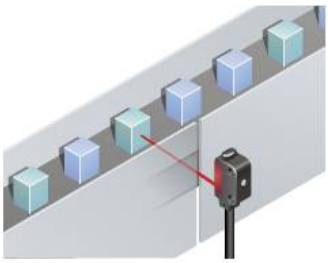
Confirming arrival of substrate



Determining cutting position of sheet



Sensing unevenly-colored workpieces



Sensing glossy or curved-surface workpiece, such as metallic pipes

Detecting O-ring

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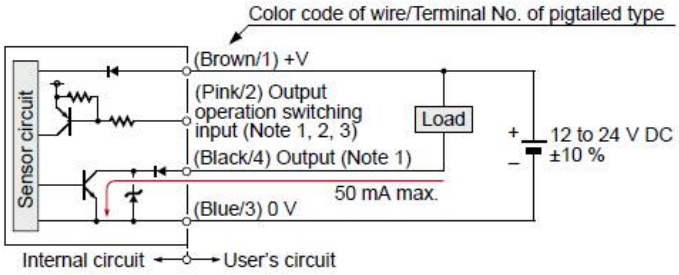
I/O circuit diagram

- **NPN output type**



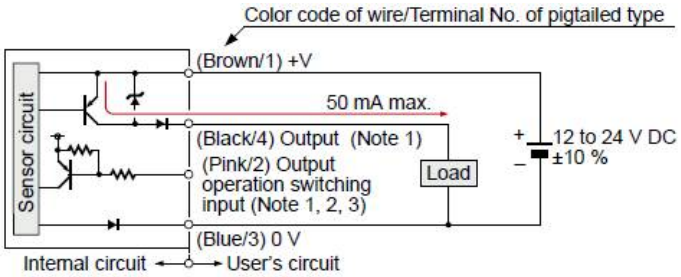
Notes: 1) The emitter of a thru-beam type does not incorporate output (black/4) and output operation switching input (pink/2).
2) Be able to select either Light-ON or Dark-ON by wiring the output operation switching input (pink/2) as shown in the following table.

Type	Light-ON	Dark-ON
Thru-beam, Retroreflective	Connect to 0 V	Connect to +V or, Open
Spot reflective/ Convergent reflective	Connect to +V or, Open	Connect to 0 V

* Insulate the output operation switching input wire (pink/2) when leaving it open.

3) When connecting the mating cable to the pigtailed type, color code of wire is "white".

- **PNP output type**



Notes: 1) The emitter of a thru-beam type does not incorporate output (black/4) and output operation switching input (pink/2).
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Type	Light-ON	Dark-ON
Thru-beam, Retroreflective	Connect to 0 V	Connect to +V or, Open
Spot reflective/ Convergent reflective	Connect to +V or, Open	Connect to 0 V

* Insulate the output operation switching input wire (pink/2) when leaving it open.

3) When connecting the mating cable to the pigtailed type, color code of wire is "white".