



Digitized Automation for a Changing World

Delta Laser Displacement Sensor LD-E Series



www.deltaww.com



Laser Displacement Sensor LD-E

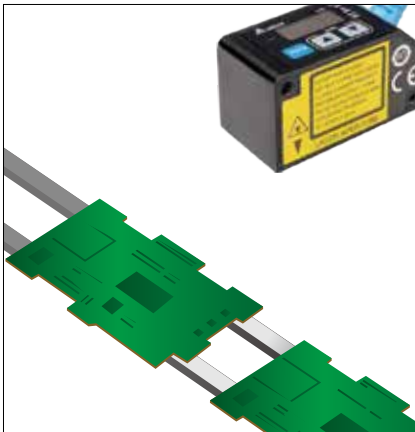
Senses the distance to objects using triangular reflection with a high-resolution CMOS sensor.

Measures the thickness and width of the objects to detect height, gradient, position, flatness, gap, distance, and runout

- 5 models of sensing ranges: 500 ± 200 mm / 220 ± 100 mm / 100 ± 35 mm / 50 ± 15 mm / 30 ± 5 mm
- 7-segment display
- Digital I/O / Analog 4 ~ 20 mA / Modbus RS-485 communication
- Linearity $\pm 0.1\%$ ~ $\pm 0.3\%$



Applications



PCB parts presence or absence detection



Overlap detection



Electric parts front back detection



Completion review



O-ring presence or absence review



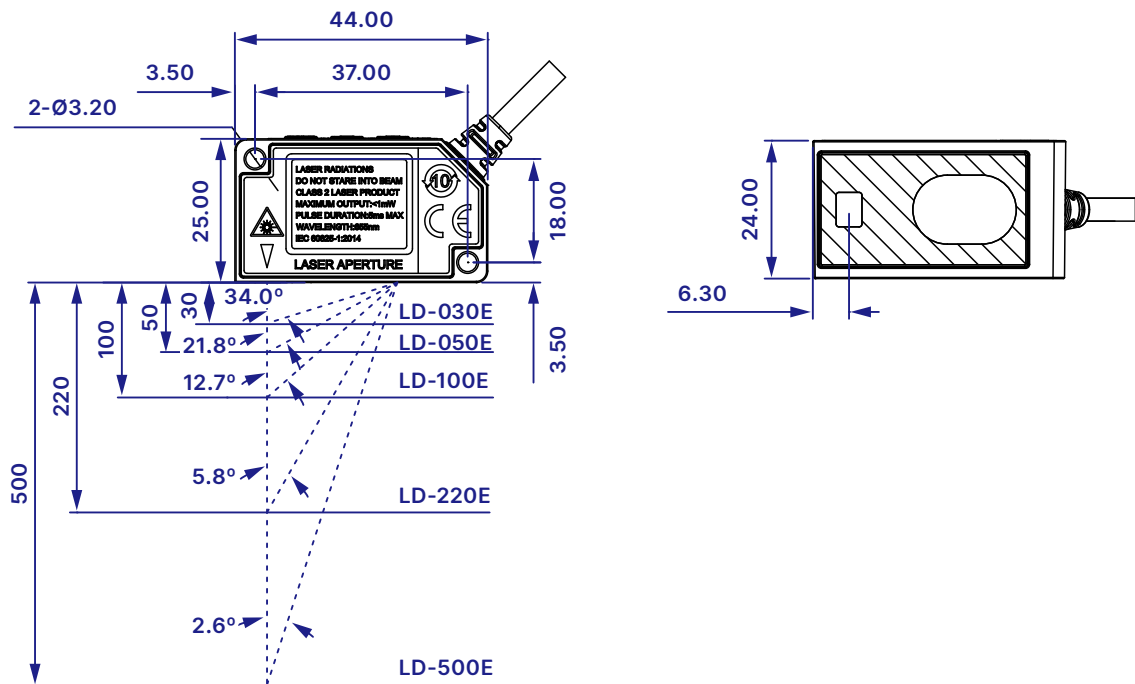
Joint gap detection

Specifications

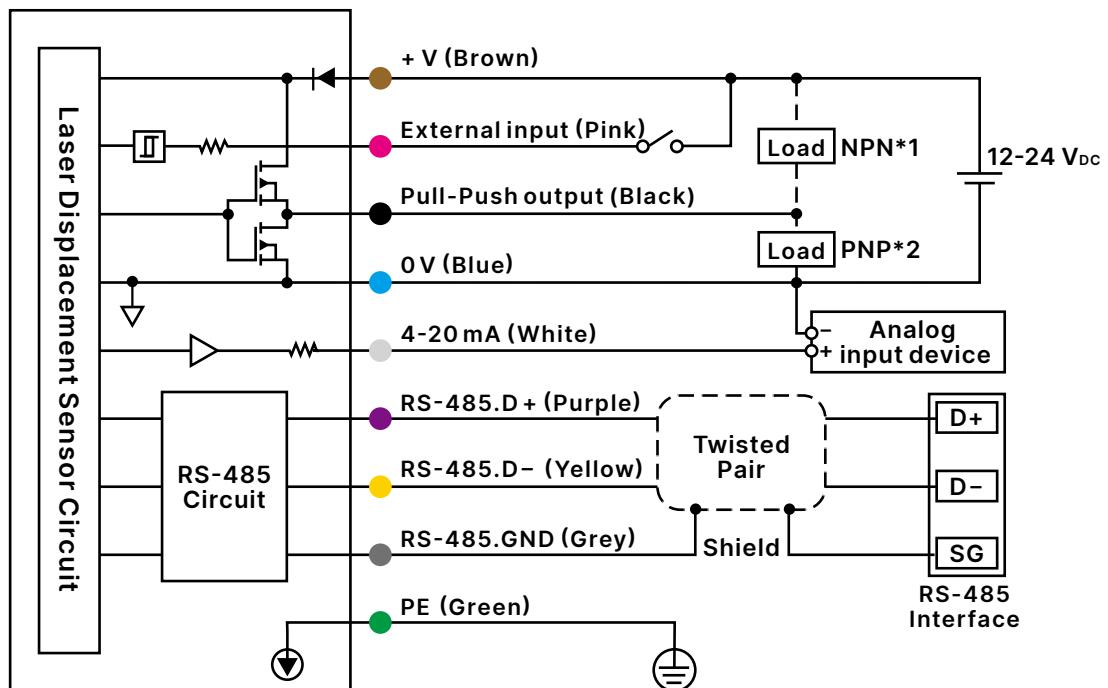
Model	LD-030E-M22	LD-050E-M22	LD-100E-M22	LD-220E-M22	LD-500E-M22
Detection method	Triangular measurement				
Reference Distance (mm)	30	50	100	220	500
Measurement Range (mm)	± 5	± 15	± 35	± 100	± 200
Light spot diameter (center position)	Approx. 100 × 100 μm	Approx. 80 × 70 μm	Approx. 136 × 110 μm	Approx. 290 × 238 μm	Approx. 541 × 330 μm
Interface	Digital I/O / Modbus Communication (RS-485)				
	Support 9,600/14,400/19,200/38,400/57,600/115,200 bps (Factory default: 115,200 bps)				
	Support RTU / ASCII 8,N,1 8,N,2 8,O,1 8,O,2 8,E,1 8,E,2 7,O,1 7,E,1 7,O,2 7,E,2				
Light Source	Laser CLASS 2				
Input Voltage	12 ~ 24 V _{DC} ± 10 % , 1W				
Analog Output	Current range: 4 ~ 20 mA, load impedance: ≤ 300 Ω				
Digital Output	Optional function: Measuring range / Comparison output, Push-Pull Output , <100 mA				
Digital Input	Optional function: Zero point / Teaching, High-level ≥ 2 V, Low-level ≤ 0.8 V				
Repeatability	5 μm	15 μm	70 μm	200 μm	300 μm (300 ~ 500 mm) 800 μm (500 ~ 700 mm)
Linearity	± 0.1 % F.S	± 0.1 % F.S	± 0.1 % F.S	± 0.2 % F.S	± 0.2 % F.S (300 ~ 500 mm) ± 0.3 % F.S (500 ~ 700 mm)
Sampling Rate (ms)	1.5 / 3 / 5 (Default: 1.5)				
Indicator	Laser ON: blue, DO: green, DI: yellow				
Protection Circuit	Protection against reverse power protection, output overcurrent, power supply surge, output surge				
Operating Temperature	-10 ~ 50 °C				
Storage Temperature	-25 ~ 65 °C				
Ambient Humidity	30 ~ 85 %				
Enclosure Rating	IP67				
Ambient Light Resistance	3,000 lux or less				
Vibration Resistance	10 ~ 55 Hz, 1.5 mm, 3 axes for 2 hours				
Insulating Resistance	> 20 MΩ (500 V _{DC})				
Withstand Voltage	500 V _{AC} 50/60 Hz, 1 min				
Certification	CE				
Materials	Optical window: PC; Case: Aluminum; Cable: PVC				
Cables	Length: 2 m				
Dimensions	44 × 25 × 24 mm				

Dimensions

Unit: mm



Wiring Instructions



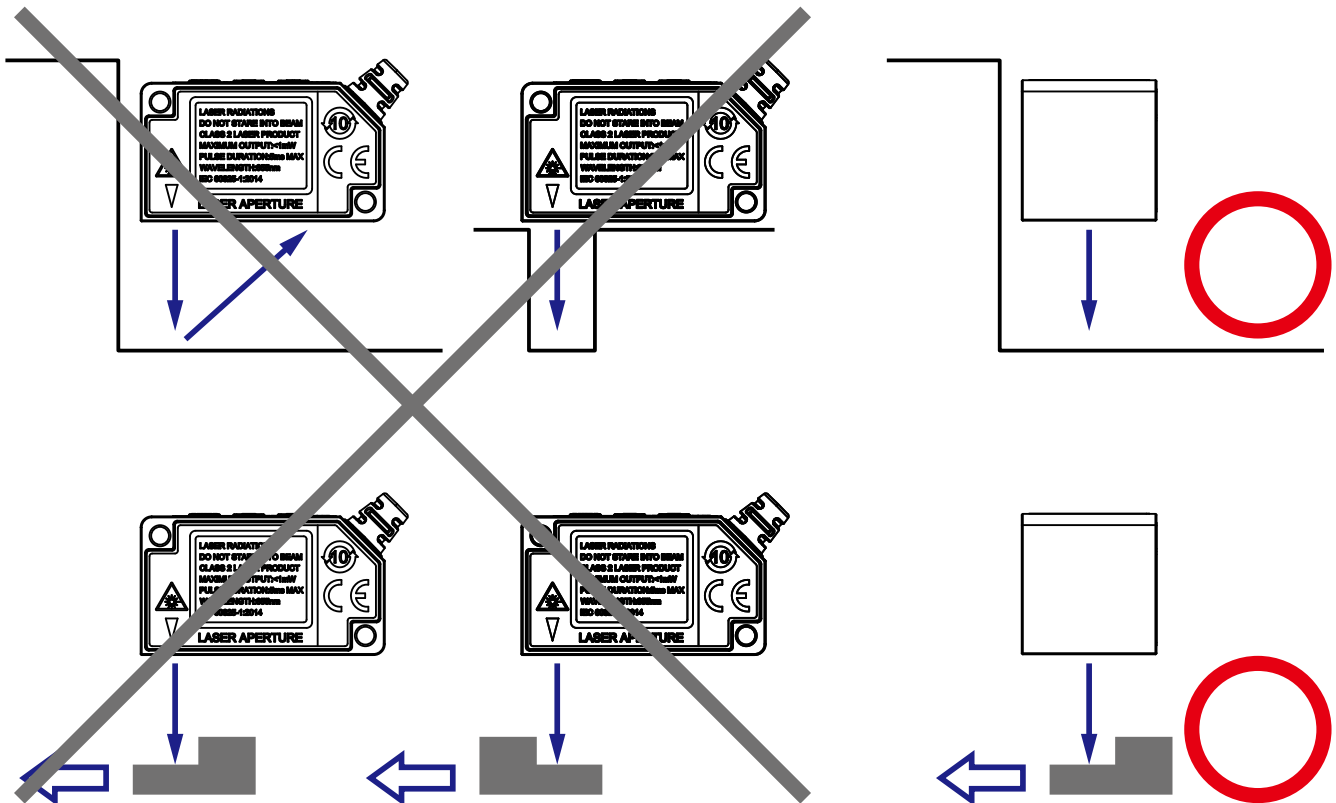
***Note 1:** In case of NPN connection, please connect the load between black and brown pin (+ V)

***Note 2:** In case of PNP connection, please connect the load between black and blue pin (0 V)

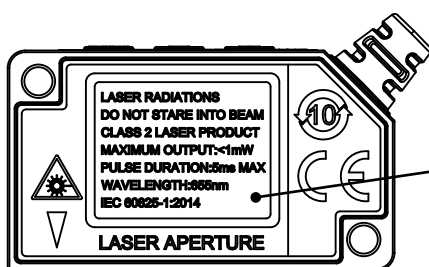
Caution on Mounting Direction

For best product performance, please note the following instructions when installing products:

- When products cling to devices, install the products in parallel with the devices to assure product performance
- When the shape of an inspection object extrudes, ensure the product's lighting route is vertical to the inspection object's path to assure product performance



Laser Label Description



Laser Radiations: Class 2 Product
Maximum Output: <1mW, Pulse
Width: 0.5 ms max.
Wave Length: 655 nm, IEC 60825-1:2014

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[illegible]

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