

Laser Displacement LD Series

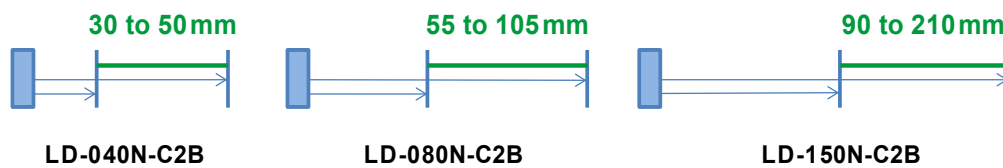
- Senses the distance to the objects using triangular reflection with high-resolution CCD sensor
- Measures the thickness and width of the objects to detect height, gradient, position, flatness, gap, distance and runout

- ▶ Aluminum case, strong structure
- ▶ Slim and small, easy to assemble
- ▶ High precision, average time setting
- ▶ IP67
- ▶ CE certification



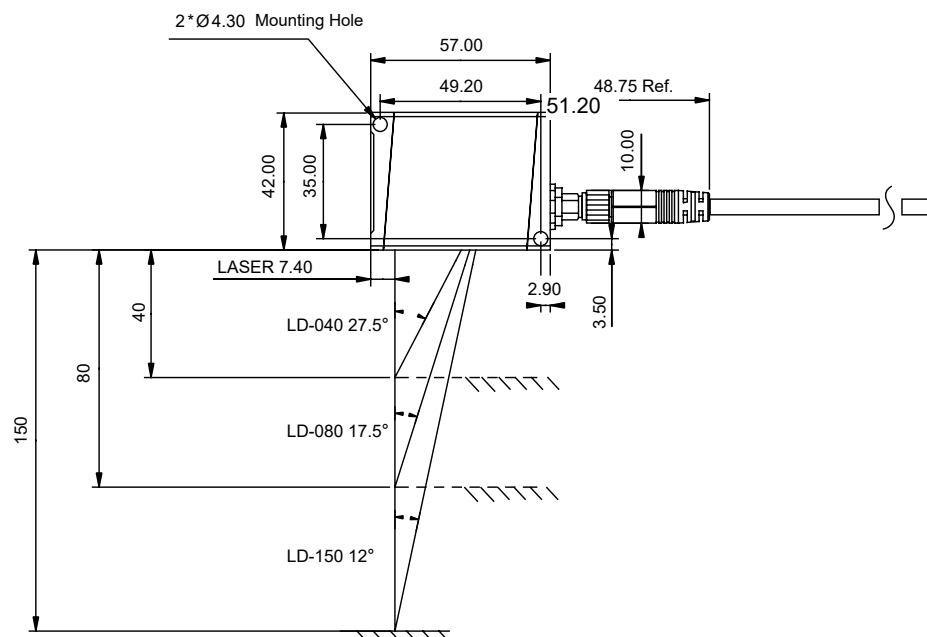
Model Name	Sensing Distance	Repeatability	Interface
LD-040N	30 ~ 50 mm	2 μm*	Digital I/O / Modbus Communication (RS-485)
LD-080N	55 ~ 105 mm	5 μm*	Digital I/O / Modbus Communication (RS-485)
LD-150N	90 ~ 210 mm	15 μm*	Digital I/O / Modbus Communication (RS-485)

* For an average count of 100. The value is ±2 μm for an average count of 100 (Sensing objective: white ceramic substrate).



Dimensions

Unit : mm



Specifications

Laser Displacement			
Sensing Method	Triangulation		
Model Name	LD-040N	LD-080N	LD-150N
Reference Distance	40 mm	80 mm	150 mm
Measurement Range	± 10 mm	± 25 mm	± 60 mm
Interface	Digital IO / Modbus Communication (RS-485)		
Spot Size	50 x 15 μm	95 x 25 μm	168 x 40 μm
Light Source	Laser CLASS 2		
Input Voltage	12 ~ 24 V _{DC} ± 10%		
Repeatability*	2 μm	5 μm	15 μm
Linearity	± 0.1%	± 0.1%	± 0.1%
Sampling Rate	1 ms		
Indicator	Laser ON: blue, Measurement range: green, Out of measurement range: orange, DO: yellow, DI: red		
Protection Circuit	Protection against reverse power connection, output overcurrent, power supply surge, output surge		
Operating Temperature	10 °C ~ 50 °C		
Storage Temperature	-20 °C ~ 75 °C		
Ambient Humidity	30 ~ 85%		
Enclosure Rating	IP67		
Ambient Light Resistance	5,000 lx or less		
Vibration Resistance	10 ~ 55 Hz, 1.5mm, 3 axes for 2 hours		
Insulating Resistance	20 MΩ or more (500 V _{DC})		
Withstand Voltage	1,000 V _{AC} 50 / 60 Hz 1min		
Certifications	CE		
Materials	Optical window: PMMA; Case: Aluminium; Cable: PVC		
Cables	M8 Connector (8 Pin)		
Dimensions	55 × 42 × 24 mm		
Weight	113 g		

* For an average count of 100. The value is ±2 μm for an average count of 100 (Sensing objective: white ceramic substrate).

Laser Label Description



Laser Radiations : Class 2 Product

Maximum Output: <math>< 1\text{mW}</math>

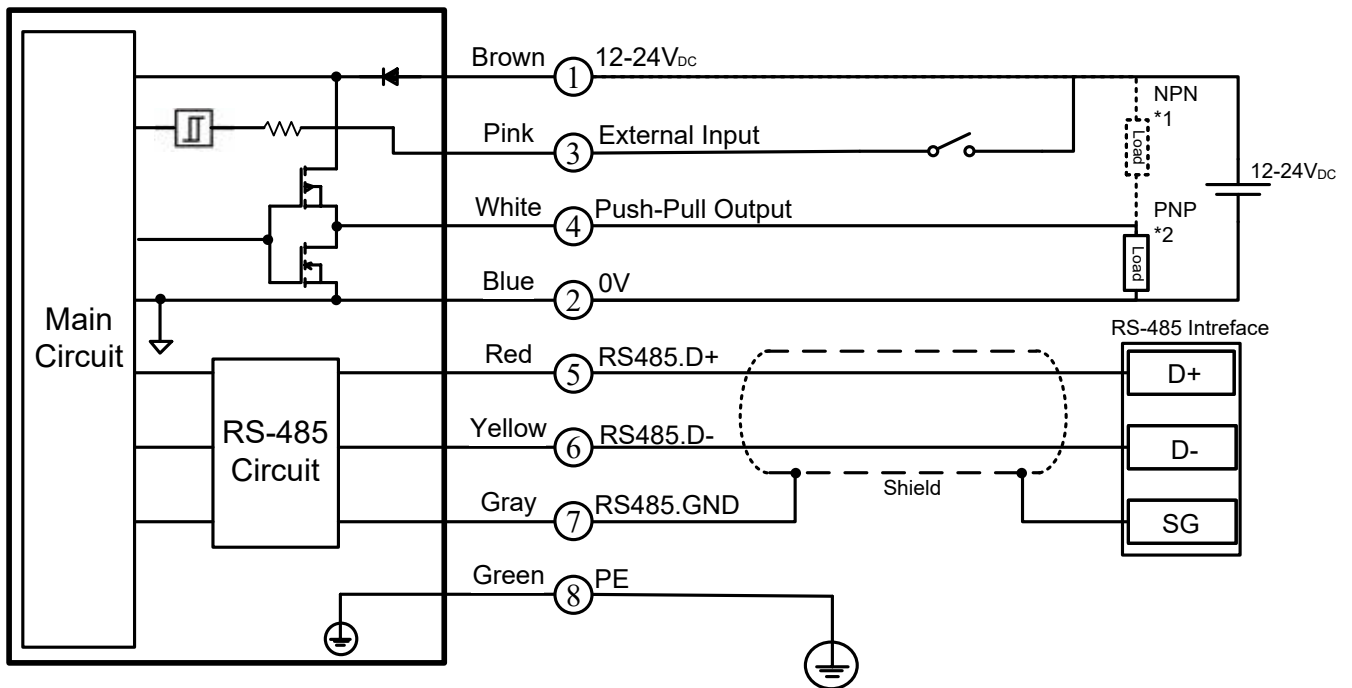
Pulse Duration: 0.5ms max.

Wave Length: 635nm, IEC 60825-1:2014

Input / Output Circuits

Pin	Color	Definition
1	Brown	12-24V _{DC}
2	Blue	0V
3	Pink	DI
4	White	DO
5	Red	RS485.D+
6	Yellow	RS485.D-
7	Grey	RS485.GND
8	Green	PE

Wiring Instructions

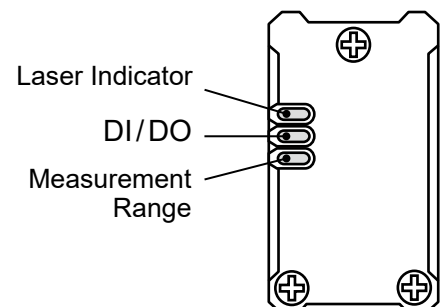


*1. In case of NPN connection, please connect the load between Pin 4 and Pin 1

*2. In case of PNP connection, please connect the load between Pin 4 and Pin 2

Laser Indicator

Indicator	Color	Description
Laser Indicator	Blue light	Start (laser on)
Measurement Range	Green light	Within measurement range
	Orange light	Out of measurement range
DI/DO	Red light	DO
	Green light	DI



Ordering Information

Model Name	Sensing Distance	Repeatability	Interface
LD-040N-C2B	30 ~ 50 mm	2 μm*	Digital I/O / Modbus Communication (RS-485)
LD-080N-C2B	55 ~ 105 mm	5 μm	Digital I/O / Modbus Communication (RS-485)
LD-150N-C2B	90 ~ 210 mm	15 μm	Digital I/O / Modbus Communication (RS-485)

* When measuring for 100 times, the average repeatability rate is 2 μm (inspecting object: white ceramic substrate)

Wiring Material	Item	Serial Number
Cable	1.5 m	UC-S015088
	3 m	UC-S030088
	5 m	UC-S050088

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 is extrusive, ensure the product's lighting route is vertical to the inspection object's path to assure product performance

