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Find the *Keyence LG-C1* at our website: *Click HERE*

Laser Gauge

LG Series

Features

- Wide measurement range of 40 mm 1.57"
- 1 mm 0.04" x 2 mm 0.08" beam spot
- Built-in 2-color display
- Stable detection unaffected by target color and surface conditions

Measuring range

80 ± 20 mm (3.15"± 0.79")



Description

Built-in display

The built-in display allows the sensor-to-target distance to be easily confirmed without external equipment such as digital meter relay. Operators can easily set up the LG Series by confirming the displayed value. The LG Series also provides the upper/lower limit comparator function, allowing tolerance limit differentiation without other equipment.

2-color LEDs measurement display

2-color LEDs are employed for the measurement display and the tolerance limit display. The green LED lights when the measured value is within the tolerance limits and the red LED lights when it is out of the tolerance limits.



Green LED
Within tolerance limits



Red LED
Out of tolerance limits

Stable detection unaffected by target color and surface conditions

The LG Series ensures stable detection accurate down to 0.1 mm 0.004".

One-touch zero set

Zeroing is as simple as pressing a button. And the LG Series can even be zeroed remotely with an external signal.





Visible laser beam clearly indicates the measuring point.

The visible semiconductor laser beam with a 1 mm x 2 mm 0.04" x 0.08" beam spot clearly indicates the measuring point.

Stores up to two sets of tolerance limits.

The LG Series can store up to two sets of upper/lower limits. Even if the target size is changed, the LG Series allows continuous measurement without stopping the line operation since the preset tolerance limits can be easily switched by external input signals.

Scaling function allows the display value to be changed.

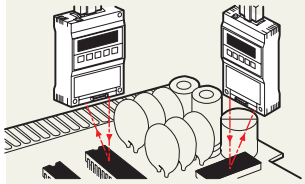
The displayed value can be freely changed using the built-in calculation function. The LG Series can display the displacement from a reference value as well as the actual target height.

Power/Output converter

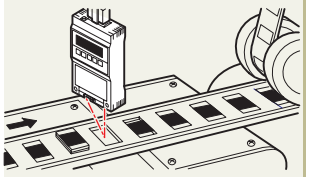
An LG-C1 PNP converter and 24-to-12 VDC converter is available.

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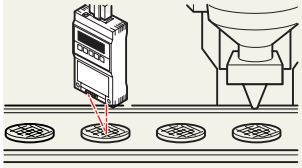
Applications



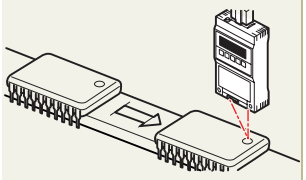
Checking component height



Detection of ICs in tape



Detection of objects with small color variations, like cookies



Checking IC orientation, regardless of surface reflectivity

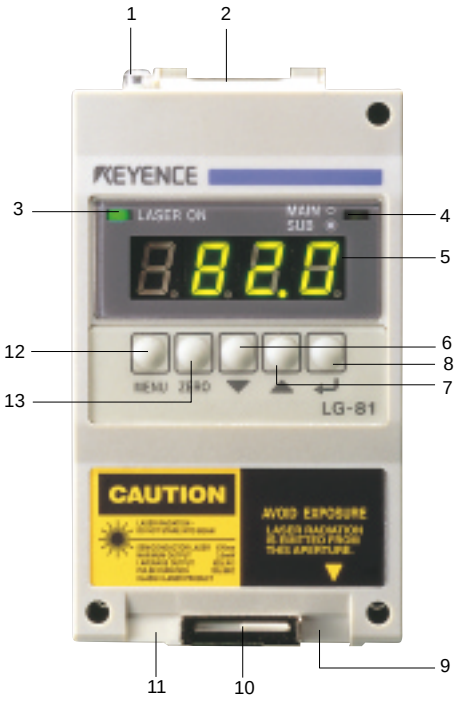
Specifications

Model			LG-81
Reference distance			80 mm 3.15"
Measuring range			±20 mm 0.79"
Light source			Visible semiconductor laser
	Wavelength		670 nm
	Class	FDA	Class II
Spot diameter			1 x 2 mm [1] 0.04" x 0.08"
Indication accuracy			±0.1 mm 0.004"
Resolution			0.1 mm [2] 0.004"
Display range			-99.9 to +99.9
Display rate			40 ms/cycle, 80 ms/cycle, 160 ms/cycle, 640 ms/cycle [3]
Display character			7 segment green/red LED (character height: 10 mm 0.39")
Control input	Synchronous input		NPN or non-voltage contact signal
	AUTO ZERO input		
	Tolerance selector input		
Output	Control output		HI, GO, LO: NPN 100 mA max. (40 V max.), Residual voltage: 1 V max. [4]
	Alarm output		NPN: 100 mA max. (40 V max), Residual voltage: 1 V max. (N.C.) [4]
Response time			10 ms min. (4 levels selectable)
Temperature fluctuation			0.03% of F.S./°C
Power supply			12 VDC±10%
Power consumption			200 mA max.
Other functions			AUTO ZERO function, SCALING function, Tolerance memory function
Ambient light			Incandescent or fluorescent lamp: 2,500 lux max.
Relative humidity			35 to 85%
Vibration			10 to 55 Hz, 1.5 mm 0.06" double amplitude in X, Y, and Z directions, 2 hours respectively
Ambient temperature			0 to +40°C
Housing			Glass fiber reinforced resin
Weight (including 2-m 6.6' cable)			Approx. 300 g

1. When measuring a target placed at the reference distance
2. When measuring a white paper target placed at the reference distance
3. Varies according to the number of measurements for averaging
4. NPN output can easily be converted to PNP output by connecting the optional OP-5148 PNP Output Converter.

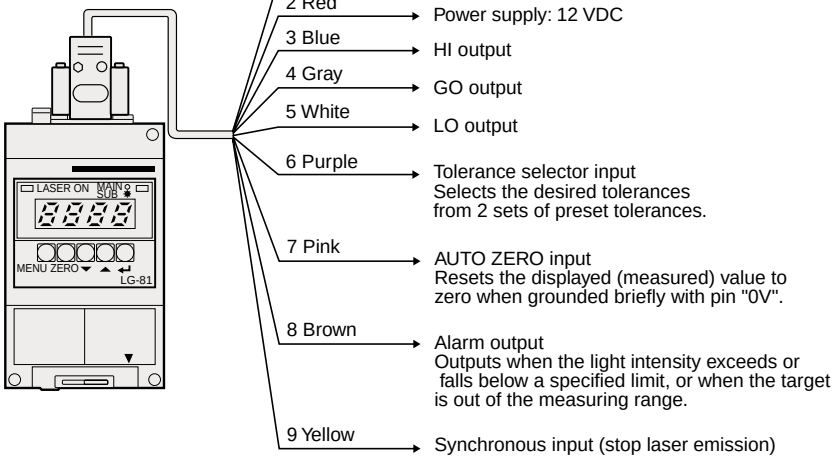
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Part Names and Functions

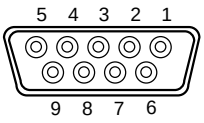


1 Comparator output indicator
Lights green when the measured value is between the upper and lower tolerance limits. Lights red when the measured value is above the upper limit or below the lower limit.
2 I/O connector port
3 Laser emission indicator
Lights when the laser beam is being emitted. Also lights when synchronous input is OFF.
4 Tolerance selector indicator
Lights when tolerance No. 2 is called up.
5 Display
Displays the measured value in green when it is between the upper and lower tolerance limits. Displays the measured value in red when it is above the upper limit or below the lower limit.
6 DOWN arrow key
7 UP arrow key
8 ENTER key
9 Laser emitter portion
10 Laser beam shield
11 Laser receiver portion
12 MENU key
13 AUTO ZERO key

Connections

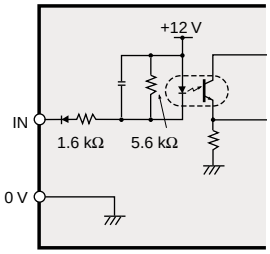


I/O connector port
pin assignment

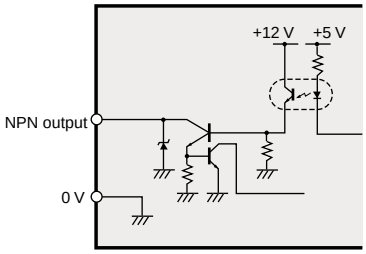


Input/Output Circuits

Input circuit
Input to tolerance limit selection, auto-zero and synchronous input terminals.



Output circuit
NPN output (HI, GO, LO, ALARM)



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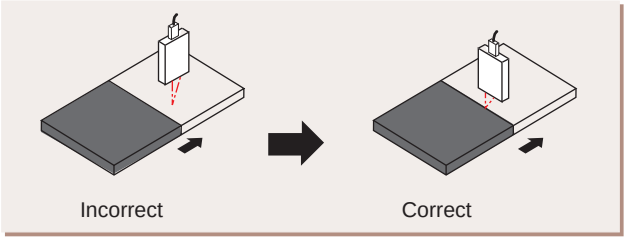
Hints on Correct Use

Noise interference

Keep the power and connection cables away from high-voltage lines and power lines.

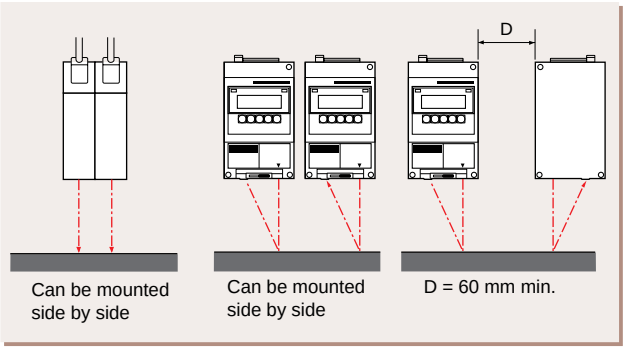
Mounting sensor head

When a target consists of different colored portions or consists of different materials separated by a border, measurement errors may result depending on the orientation of the sensor head. To minimize measurement deviation, install the sensor head parallel to the border line as shown in the illustration below.



Interference area

When mounting two or more sensor heads side-by-side, observe the following guidelines.



Warning

The LG Series conforms to FDA standard as follows:

Model	LG-81
FDA	Class II

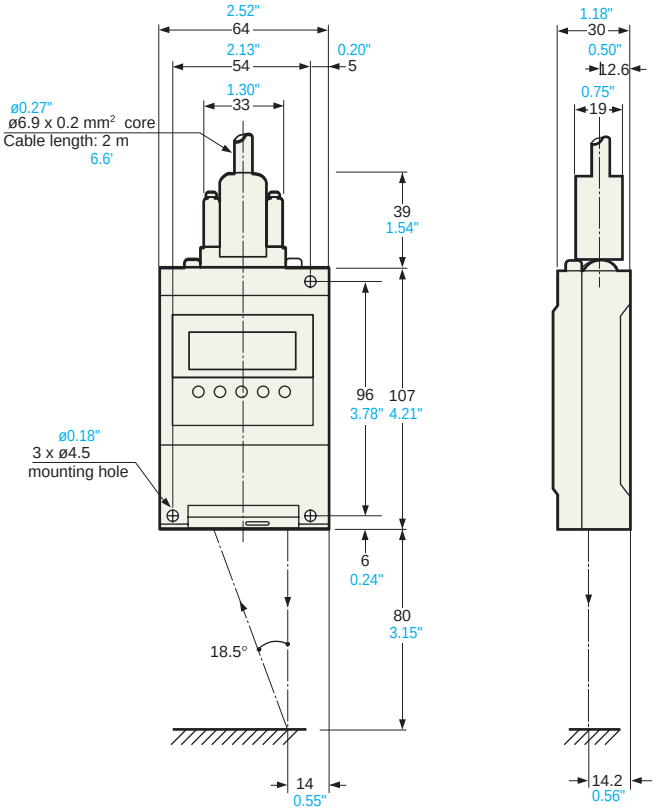
FDA Class II



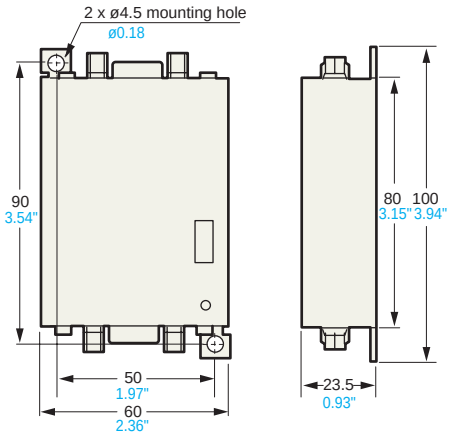
Dimensions

Unit: mm Inch

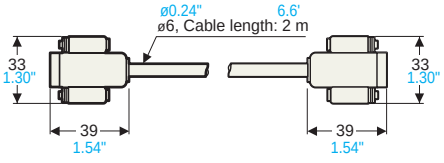
LG-81



LG-C1 (optional)



Connector cable (accessory for LG-C1)



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