Dietz
Sensortechnik

Micro Laser Distance Sensor

HG-C SERIES
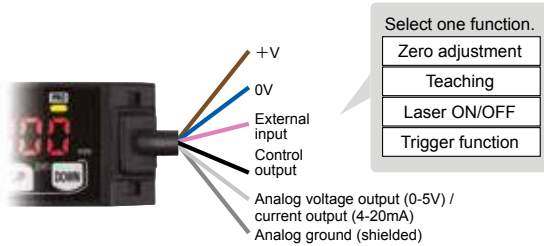
Large measuring range:
25-600mm

LASER RADIATION
DO NOT STARE
INTO BEAM
(MAXIMUM OUTPUT) 1mW
(PULSE DURATION) 5ms max.
(WAVELENGTH) 655nm
CLASS2 LASER PRODUCT
(IEC60825-1 2007)
LASER APERTURE

Analog voltage output (0-5V) / current output (4-20mA)

+ V
0 V
External inputs
Control outputs
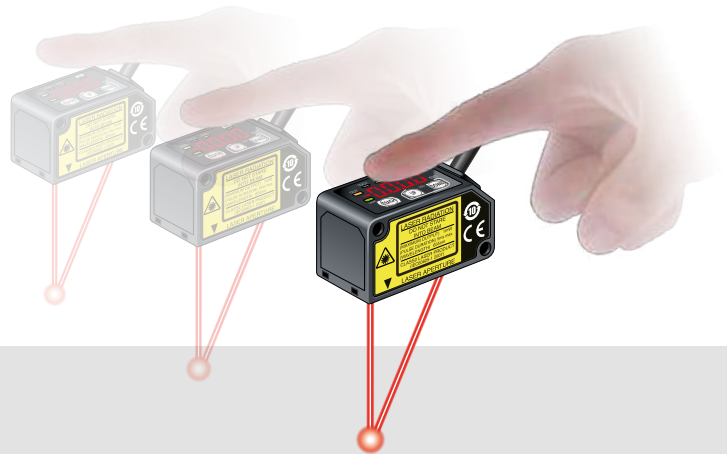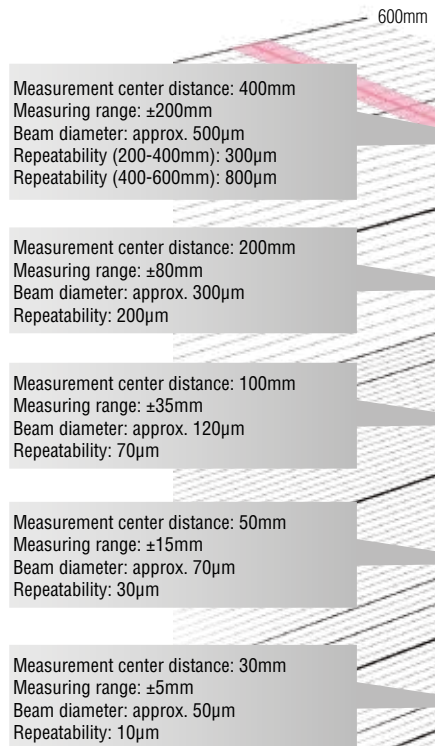Analog voltage output (0-5V) / current output (4-20mA)
Analog ground (shielded)
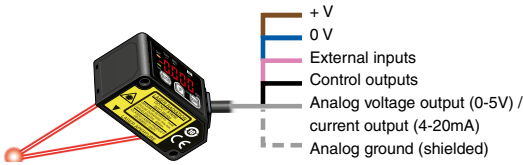
The sensor not only indicates measured values in mm, but also outputs analog voltage / current. The data can be used for various calculations and storage (logging) when the output is sent to a PLC + analog unit.
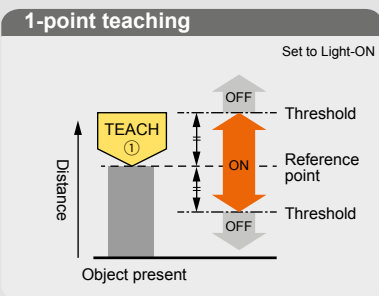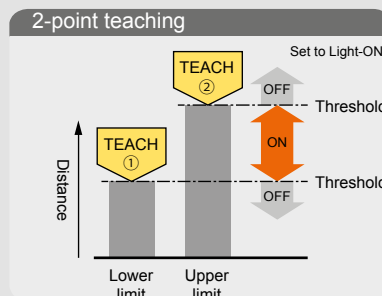
Configurable external input

+V
0V
External input
Control output
Analog voltage output (0-5V) / current output (4-20mA)
Analog ground (shielded)

Select one function.
| Zero adjustment |
| Teaching |
| Laser ON/OFF |
| Trigger function |

The external input can be configured to perform one of four functions: zero adjustment, teaching, Laser ON/OFF, trigger function selection.

600mm
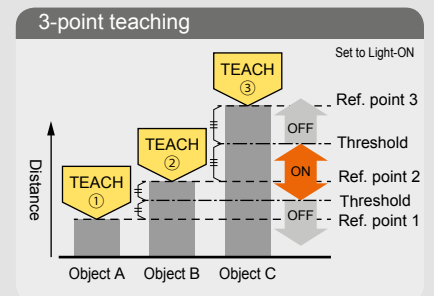
Measurement center distance: 400mm
Measuring range: ±200mm
Beam diameter: approx. 500µm
Repeatability (200-400mm): 300µm
Repeatability (400-600mm): 800µm

Measurement center distance: 200mm
Measuring range: ±80mm
Beam diameter: approx. 300µm
Repeatability: 200µm

Measurement center distance: 100mm
Measuring range: ±35mm
Beam diameter: approx. 120µm
Repeatability: 70µm

Measurement center distance: 50mm
Measuring range: ±15mm
Beam diameter: approx. 70µm
Repeatability: 30µm

Measurement center distance: 30mm
Measuring range: ±5mm
Beam diameter: approx. 50µm
Repeatability: 10µm

Teaching & window comparator mode

1-point teaching

Set to Light-ON

OFF — Threshold
TEACH ① ON — Reference point
OFF — Threshold

Distance

Object present

Perform 1-point teaching and the threshold range is set for the distance from the reference surface of the object to be detected.

2-point teaching

Set to Light-ON

TEACH ② OFF — Threshold
ON
OFF — Threshold

Distance

Lower limit   Upper limit

Press the button TEACH once for the lower (first point) and once for the upper limit (second point). This is useful for detecting objects at different distances.

3-point teaching

Set to Light-ON

TEACH ③ — Ref. point 3
OFF — Threshold
TEACH ② ON — Ref. point 2
TEACH ① OFF — Threshold
— Ref. point 1

Distance

Object A   Object B   Object C

This is the method to set the threshold range by conducting the teaching at 3 points (detecting object A, B and C). After teaching, the reference points are automatically sorted in ascending order (reference point 1, 2 and 3). The thresholds are set at the midpoints between reference point 1 and 2, and 2 and 3, respectively. This is useful for detecting objects at different distances.

400mm

280mm

200mm

135mm
120mm
100mm
65mm
50mm   35mm
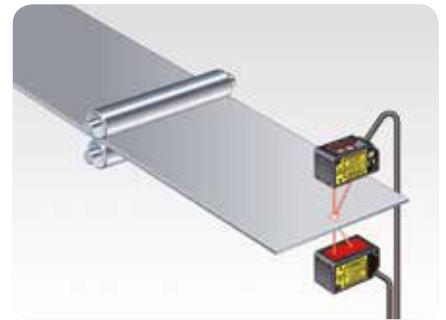30mm   25mm
0mm
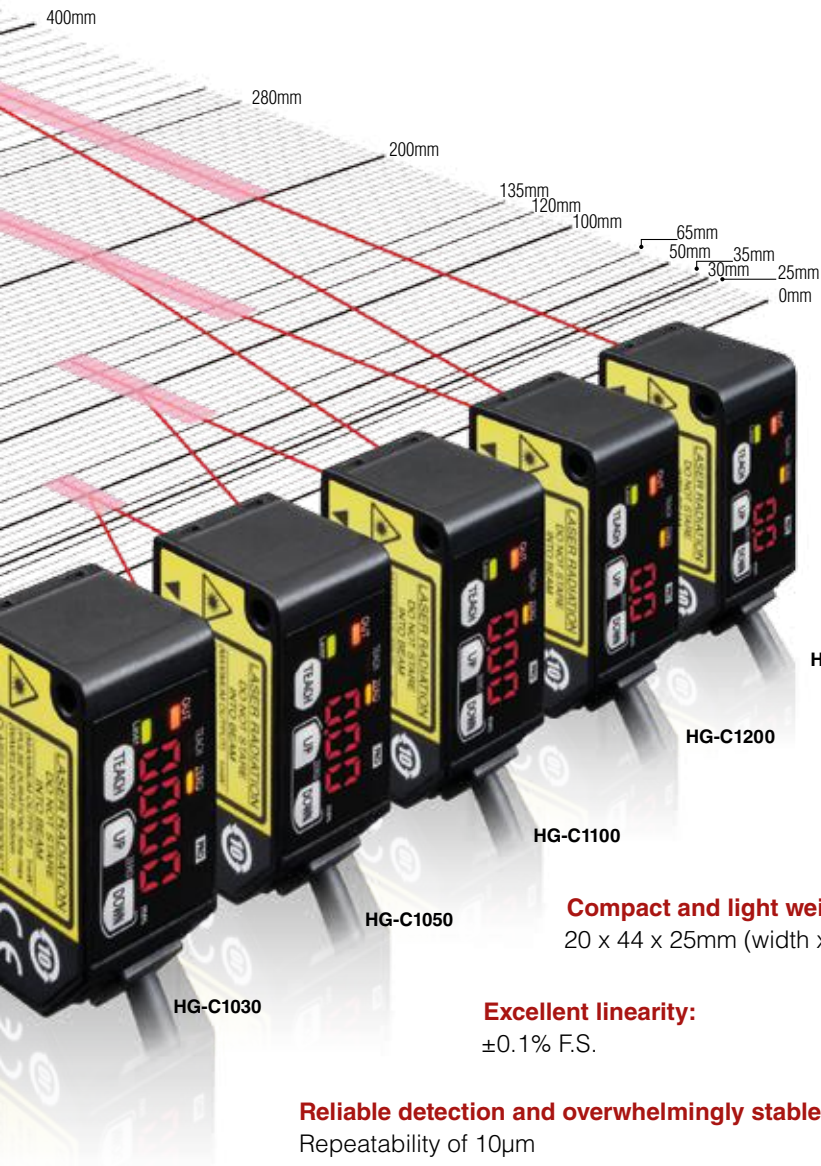
HG-C1400

HG-C1200

HG-C1100

HG-C1050

HG-C1030

Compact and light weight:
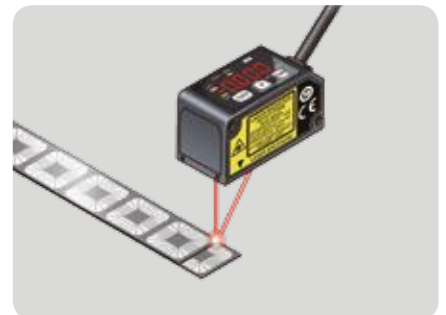20 x 44 x 25mm (width x height x depth)

Excellent linearity:
±0.1% F.S.

Reliable detection and overwhelmingly stable:
Repeatability of 10μm

Measuring the thickness of a panel
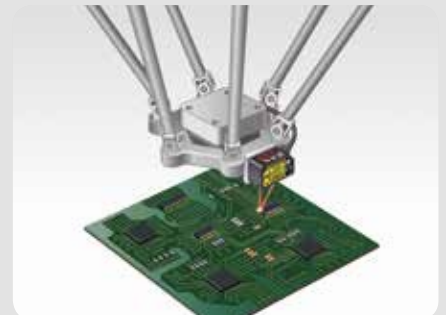
Controlling the dispenser head height

Checking for overlapped lead frames

Measuring the hoop slack

Checking for presence of O ring

Controlling the height of a robot

SPECIFICATIONS

NPN output	HG-C1030	HG-C1050	HG-C1100	HG-C1200	HG-C1400
PNP output	HG-C1030-P	HG-C1050-P	HG-C1100-P	HG-C1200-P	HG-C1400-P
Applicable standards	Conforming to EMC Directive and FDA Standard				
Measurement center distance	30mm	50mm	100mm	200mm	400mm
Measuring range	±5mm	±15mm	±35mm	±80mm	±200mm
Repeatability	10µm	30µm	70µm	200µm	300µm (200-400mm) 800µm (400-600mm)
Linearity	±0.1% F.S.			±0,2% F.S.	±0,2% F.S. (200-400mm) ±0,3% F.S. (400-600mm)
Beam diameter	Approx. 50µm	Approx. 70µm	Approx. 120µm	Approx. 300µm	Approx. 500µm
Supply voltage	12 to 24V DC ±10% including ripple max. 10% (P-P)				
Control output	PNP or NPN open-collector transistor				
Output operation	Either Light-ON or Dark-ON				
Short-circuit protection	Incorporated (auto-reset)				
Analog output	Voltage output: 0 to 5V (at alarm: +5.2V) / Output impedance: 100Ω Current output: 4 to 20mA (at alarm: 0mA) / Load impedance: 300Ω or less Switchable via settings				
Response time	Switchable between high speed (1.5ms), standard (5ms), and high precision (10ms)				
Degree of protection	IP67 (IEC)				
Ambient temperature	-10 to +45°C (no dew condensation or icing allowed), storage: -20 to +60°C				
Ambient humidity	35 to 85% RH, storage: 35 to 85% RH				
Ambient illumination	3000ℓx max. (illumination level of light receiving surface under incandescent light)				
Cable	5-core cable, 2m long				
Material	Casing: aluminum die-cast, front cover: acrylic				

You would like to receive a feasibility study or an offer?
Please contact us:

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