

Make Life Easy 



## Displacement Sensors BD Series

The perfect Solution for High Precision Displacement Measurement



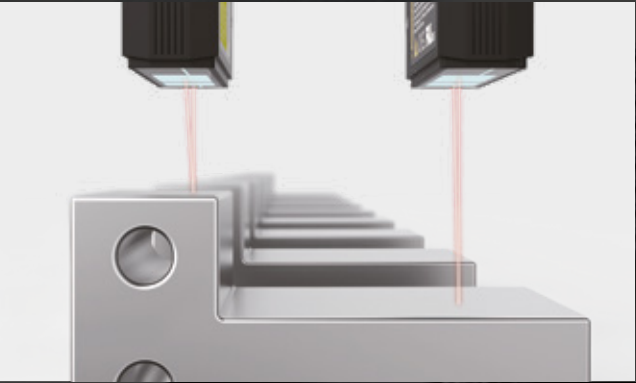
# Displacement Sensors

## BD Series

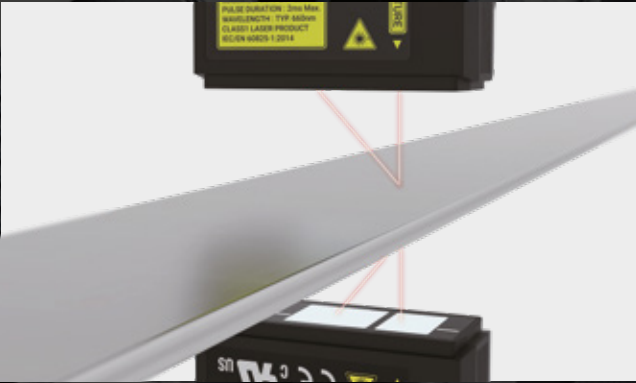
Smart manufacturing and assembly are becoming standard in industries and displacement sensors are revolutionizing the way products are processed. Displacement sensors can measure thickness, width, level difference, disparity, curve, evenness of target objects by detecting the amount of displacement in target objects. In actual applications, displacement sensors can be used to measure the level of air pressure in tires to check the height of automobiles during quality control, detect foreign objects on conveyor belts, check finish quality of products, and more. Stable and accurate measurement is possible regardless of material or shape of targets, offering ideal solutions for manufacturing lines and quality control across diverse industrial environments.



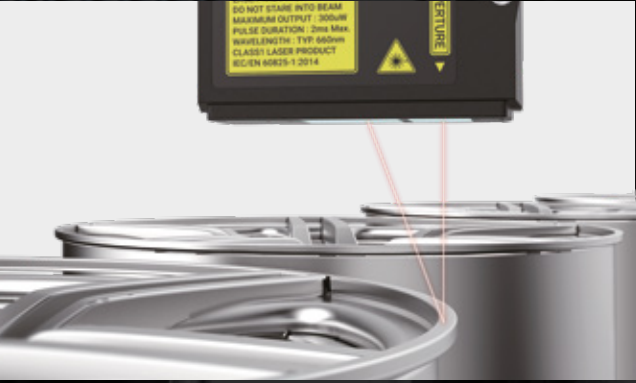
Autonics displacement sensors are used in diverse applications, improving quality and process across various industries.



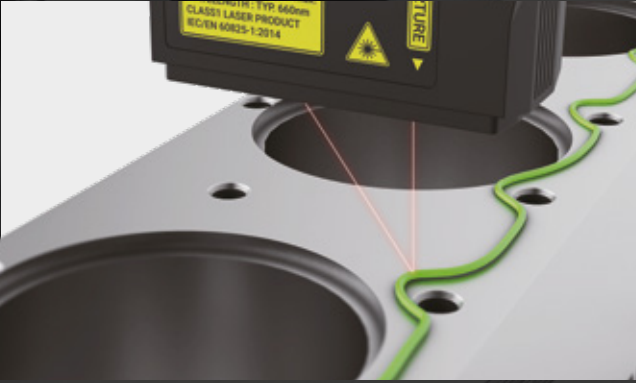
**Level Difference** Check the level difference of targets using calculations from multiple sensors.



**Thickness** Check the thickness of targets using calculations from multiple sensors.



**Evenness** Check for evenness or wear of targets by measuring the distance of the target.



**Height** Check for size disparity, curves, or vibration on targets by measuring the height of the target.

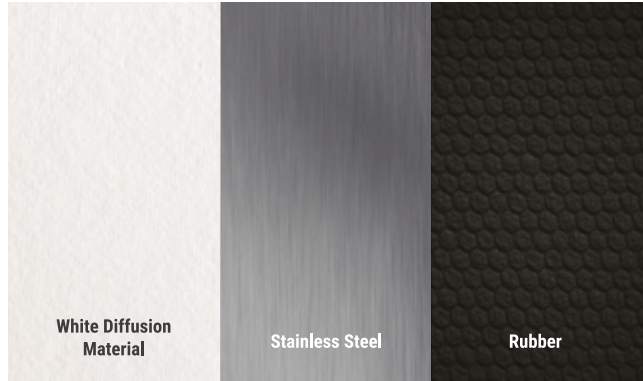


## Main Features



### Self-Developed Algorithm

Using a self-developed algorithm Autonics has stabilized irregular wave patterns received from different materials allowing accurate measurement of various surfaces.



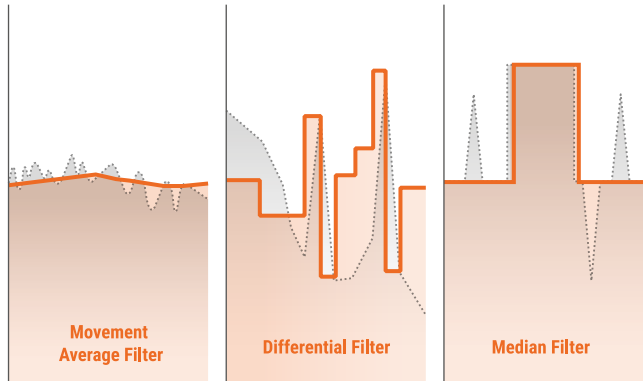
### Diverse Materials

Using high dynamic range, the sensors can automatically control and optimize laser levels depending on the reflectivity of targets. This allows stable detection regardless of target material or color.



### Calculation Function

Calculated measurements from 2 or more sensors can be used to measure thickness, level difference, surface disparity, and evenness of targets. Addition, subtraction, average calculations are supported.



### Various Filters

Movement average, differential, and median filters allow for accurate and stable correction in measurement values in the event of sudden changes from mechanical noise or other variables.

## High Accuracy, Stability, and Flexibility

The BD series laser displacement sensors offer maximum resolution of 1  $\mu\text{m}$  and maximum detection distance up to 120 mm. With high dynamic range, the sensors offer accurate detection regardless of target material or color. Three different filters are available for stable correction of measurement values and calculation functions allow for diverse measurement options including thickness, level difference, evenness, and more.

## 1 $\mu\text{m}$ Resolution

for stable and precise measurements

## 0.1% of Full Scale Linearity

for high accuracy measurements

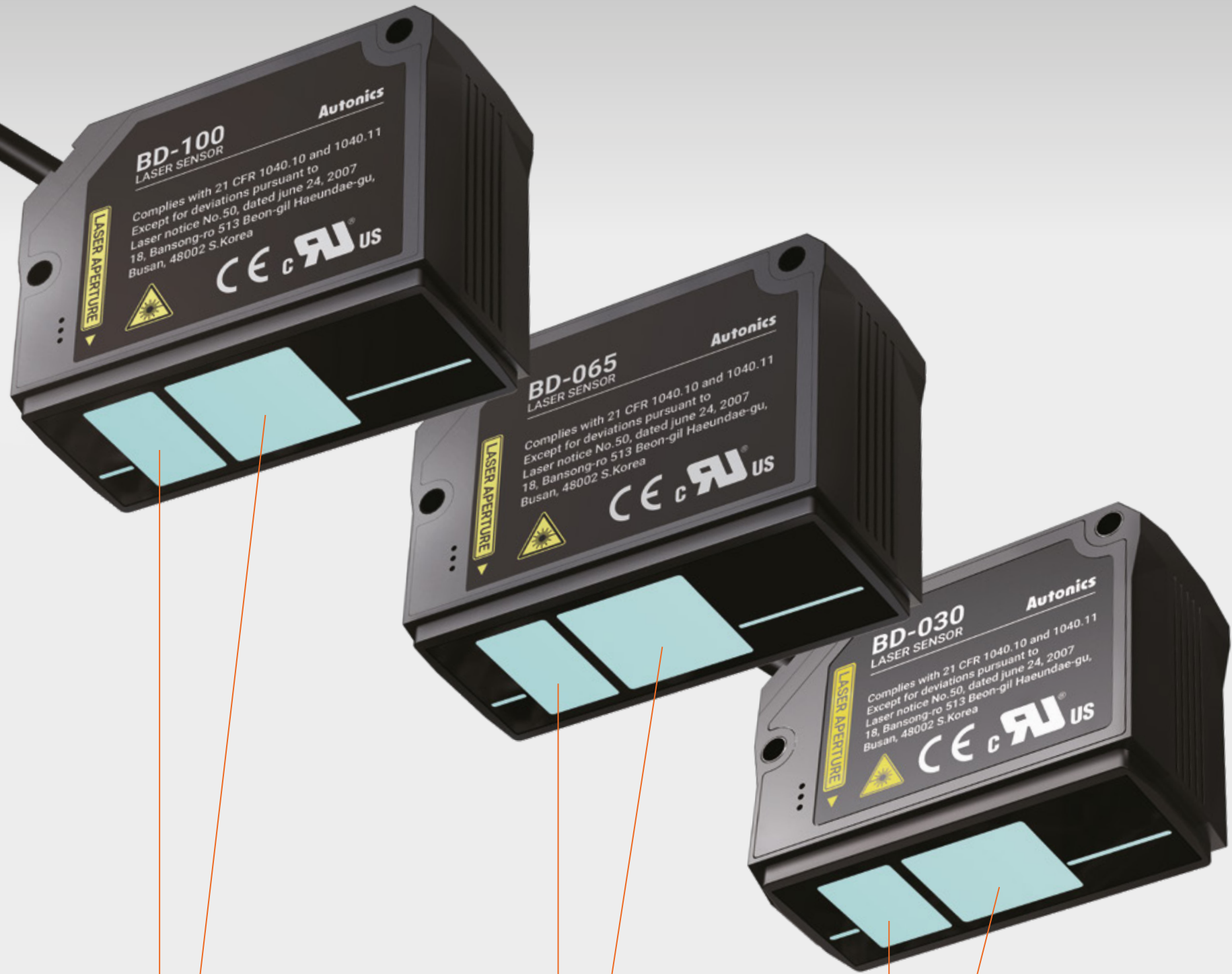
## 0.05% of Full Scale Temperature Property

for minimal impact from temperature change

## Max 330 $\mu\text{s}$ Measurement Cycle

for detection of fast moving targets

\* The above specifications are for BD-030 models. For detailed specifications, please refer to our catalogue.

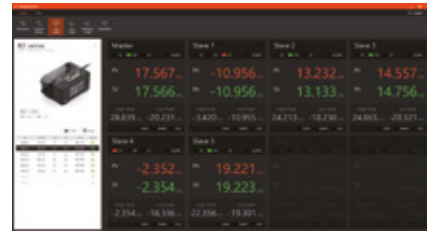


BD-100  
측정거리  
100 $\pm$ 20 mm

BD-065  
Measurement distance  
65 $\pm$ 10 mm

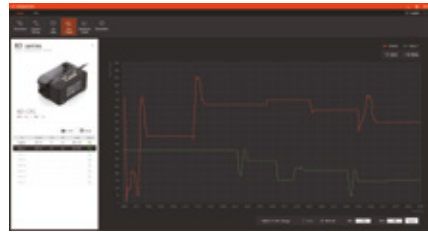
BD-030  
Measurement distance  
30 $\pm$ 5 mm

## Dedicated Laser Displacement Software with Intuitive Graphic User Interface



### Live Data

Displays real-time measurement values and status from all connected amplifier units. The data is saved automatically for future analysis.



### Live Graph

Displays real-time measurement values from all connected amplifier units in graph format.



### Wave Pattern Graph

Displays the wave pattern of received light from amplifier units. Can display measurement values and output status of up to 8 sensors.

## Product Components



### Amplifier Unit BD-A1

Up to 8 amplifier units (BD-A1) can be interconnected. Various functions are available including calculation, emitter/receiver optimization, zero-point setting, and auto-sensitivity adjustment.



### Communication Converter BD-C

\* Sold separately  
The BD-C communication converter allows RS232C and RS485 communication with PLCs, PCs, analog control devices, and other host devices.



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## Products

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• Displacement Sensors • Ultrasonic Sensors • Rotary Encoders • Temperature Sensors • Temperature Transmitters • Pressure Sensors  
• Pressure Transmitters • Smart Camera • Vision Sensors • Safety Light Curtains • Safety Door Switches • Safety Switches • Safety  
Controllers • Temperature Controllers • Solid State Relays • Power Controllers • Counters • Timers • Digital Panel Meters  
• Digital Display Units • Sensor Controllers • SMPS • Industrial PC • HMIs • Recorders • Indicators • Network Converters  
• Closed Loop Stepper Motor System • 5-Phase Stepper Motor & Drivers • 2-Phase Stepper Motor Drivers • Motion Controllers  
• Industrial Networking • I/O Terminal Blocks • Distribution Boxes • Cables • Control Switches / Pilot Lights / Buzzers • Software

\* The dimensions or specifications on this product guide may change and some models may be discontinued without notice.

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