

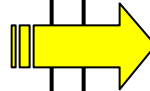


## Measuring the height to substrate in crystal oscillator unit

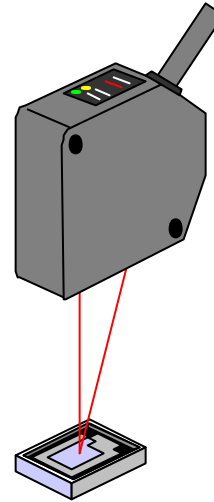
### OUTLINE / PREVIOUS

**Customer: Electronic component manufacturer**  
**Machinery: Mounting device**

When the sealant is applied to a crystal oscillator packaging device, the height of the dispenser nozzle is controlled.



### SOLUTION



### PROBLEM

Highly accurate sensor with small beam spot is required because there are patterns of gold on the ceramic substrate.

### MODEL / HOW TO

**HL-C203F HL-C2C**

**HL-C203F** with small beam spot is adopted.  
 Set to diffuse reflective mode for measurement.

### BENEFIT 1 Beam diameter F 30 $\mu$ m

With beam spot as small as F 30 $\mu$ m, the height measurement is possible avoiding the patterns of gold on the ceramic substrate.

\* Beam spot size of F 30 $\mu$ m is achieved when the measurement center distance is 30mm in diffuse reflective mode.

### BENEFIT 2 Highly accurate

**HL-C203F** is a displacement sensor with performance of sampling 100kHz, linearity  $\pm 0.03\%$ , resolution (\*) 0.025 $\mu$ m, the distance to a substrate can be accurately measured.

\* **HL-C203FE** is not subject to control, which resolution is 0.25 $\mu$ m (used in combination with controller **HL-C2CE**).

### BENEFIT 3 High speed sampling

Sampling period as high speed as 10 $\mu$ s is achieved, so that the sensor can respond to measure the height to the substrate more faster than ever before.